



City Council of Gibraltar.



ANNUAL REPORT

ON THE

HEALTH OF GIBRALTAR

FOR THE YEAR

1926

BY

Lieut.-Colonel W. C. SMALES, D.S.O., R.A.M.C.,
Medical Officer of Health.



Presented by

The Medical Officer of Health

September

1927



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†Mainly maintained by Government grants.

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*Allowance paid to a private medical practitioner as a retaining fee for his services.

†Allowance paid to an Officer of the R.A.M.C. for medical services at North Front District.

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The Hon. Colonial Secretary.

Principal Medical Officer (Military).

Principal Medical Officer (Naval).

Captain of the Port.

Port Surgeon.

Surgeon Colonial Hospital.

Medical Officer of Health.

Chairman of the City Council.

President of the Exchange Committee.

President of the Chamber of Commerce.

Secretary—E. P. GRIFFIN, Esq., M.B.E.



PREFACE.

During the year under review the health of Gibraltar has continued to be good, and the vital statistics are considered satisfactory.

With regard to infectious disease there is nothing of outstanding importance to record.

There were no cases of Small Pox during the year.

The local press have again rendered valuable assistance in all health matters.

I am much indebted to all those who have assisted me in the preparation of this Report.

W. C. SMALLES,
Lieut.-Colonel,
Medical Officer of Health.

REPORT OF MEDICAL OFFICER OF HEALTH.

SUMMARY OF VITAL STATISTICS FOR 1926.

Total area of Gibraltar Territory	{ 1,387 acres, 2 roods, 3 poles
Area of the City	{ 104 acres, 3 roods, 33 poles
Estimated Total Civil Population of Gibraltar	17,163 persons
Estimated Fixed Civil Population of Gibraltar	16,150 persons
Births in Fixed Civil Population	{ Males 218, Females 210.
Total Births	428
Birth rate per 1,000 of Fixed Civil Population	{ 25·2
Deaths in Civil Population	{ Males 156, Females 120.
Crude death rate per 1,000 of Total Civil Population	{ 16·08
Average crude death rate for previous 10 years... ..	{ 16·95
Standardised death rate corrected for age and sex distribution	{ 18·92 per 1,000
Death rate from principal acute infectious diseases in Total Civil Population ...	{ 1·2 per 1,000
Death rate from Pulmonary Tuberculosis ...	1·6 per 1,000

The marriage rate was 9·2 per 1,000 as compared with 8·1 per 1,000 in 1925.

The birth rate in 1926 was 25·2 per 1,000.

The death rate in 1926 was 16·08 per 1,000.

The infantile mortality was 107 per 1,000 births, being 24 per 1,000 above the rate for 1925.

The mortality in infancy will be found examined in detail under another heading.

GENERAL CONSIDERATIONS.

Gibraltar is a narrow peninsular running North and South. It consists of a high mountain called the "Rock" and of a flat sandy plain known as the North Front; the Neutral Territory connects it with Spain.

The Rock is of limestone formation, overlaid on the West with dark shale and covered with a layer of more recent geological formation in parts of limestone breccia or angular limestone blocks, in parts of sandstone or sand.

It is 1,396 feet above the sea level at its highest point, and some $2\frac{1}{2}$ miles long. The North Front plain is about $\frac{1}{2}$ mile in length and some 10 feet above the sea level.

The total acreage of Gibraltar territory is 1,387 acres, 2 roods and 3 poles or about $2\frac{1}{6}$ square miles.

The town proper or City of Gibraltar occupies an area some $\frac{3}{4}$ of a mile in length of 104 acres, 3 roods, 33 poles at the foot of the Rock on its lower North-Western slope.

The Neutral territory is an isthmus of some 1,500 yards long and from 1,000 to 1,800 yards wide through which runs the main road to Spain.

The Spanish city of La Linea is situated at the North of the neutral territory and immediately adjoining it.

The only civil habitations on the East side of the Rock are at Catalan Bay Village.

The rateable value of Gibraltar is £285,287-5-5 and a penny rate produces £1,188-13-11.

The Public Health Administration of Gibraltar is vested in the City Council and in the Board of Health.

The City Council are the authority for carrying out the provisions of the Public Health Ordinance relating to Water Supply, Sewerage, Prevention of Disease, General Sanitation of Gibraltar territory and the Vaccination Ordinance. The Board of Health deals with matters of sanitation arising in the port.

The Civil Hospital, Isolation Hospital, Midwives' Ordinance, Medical Work in connection with the Port, Schools, and Inspection of Foodstuffs are administered by the Colonial authorities.

METEOROLOGICAL OBSERVATIONS FOR THE YEAR 1926.

Latitude $36^{\circ} 6' N.$ Longitude $5^{\circ} 21' W.$

Instruments verified at the National Physical
Laboratory, Kew.

The Meteorological Station is situated in an obsolete bastion on the fortifications on the South-West side of the Rock, the height of the ground being 50 feet above mean sea level. Here all the instruments (except the anemometer) are kept.

The shade thermometers, kept in a Stevenson screen, are: one self-recording maximum, one self-recording minimum, a dry and wet bulb. A self-recording grass thermometer is used for registering the temperature on the grass.

The rain gauge is an 8 inch copper meteorological pattern.

The anemometer is fixed in Victoria Gardens, North Front, on the isthmus which joins Gibraltar to the mainland, and clear of the Rock to avoid eddies.

A report is sent twice daily to the Meteorological Office, London, and daily to the *Gibraltar Chronicle* for general information. A complete monthly report is also sent to the Meteorological Office, London, for publication in their journals.

The report contains statistics showing the means for the year in barometric pressure, air temperature, rainfall, humidity, cloud and wind, compared with the averages for a series of years, number of days of clear sky, overcast days, and days on which rain fell during the year. Readings are taken every day throughout the year at the 7th, 13th, 18th and 21st hour, but the following tables are compiled from the readings at the 7th, 13th, and 21st hours only.

NOTABLE FEATURES OF THE WEATHER OF 1926.

JANUARY was fine and warm, the mean temperature being $3^{\circ}.0$ above the average, and rainfall $0^{\circ}.78$ inches below, with only eight days on which rain fell, the winds were mostly light and Westerly, with high barometer.

FEBRUARY though unusually cloudy was much warmer than usual, and dry except the first 10 days which were wet and stormy.

MARCH was also above the average in temperature and very fine and dry except the last 10 days, mostly light winds.

APRIL. A normal month of shower and shine, with very light winds, a thunderstorm with the only fall of hail during the year occurring on the 23rd.

MAY slightly below the average in temperature, but fine in every other way, with light Westerly winds and clear skies.

JUNE very fine, clear and dry, no rain during the month, an occasional high wind and levanter.

JULY was normal in temperature, thundery during the last week, though no rain was recorded.

AUGUST. As usual was the hottest month, with several periods of heavy levanter, heavy fog on the 19th and 20th, and thunderstorm with some rain during the last week.

SEPTEMBER was rather below the average in temperature and rainfall, there was much levanter, and heavy fog on the 22nd, 23rd and 24th.

OCTOBER. Wet and stormy, with the heaviest rainfall of the year, 7·40 inches, being 4 inches above the average, a heavy fall of 2·74 inches occurred on the 21st with thunderstorms and high S.W. wind. The mean temperature was high, being 4° above normal.

NOVEMBER. Showery and unsettled all the month, and much cooler. The rainfall though normal extended over 17 days, with West and N.-W. winds.

DECEMBER was fine and dry, with strong East winds and only two days on which rain fell, there was an usually cold spell towards the close, the grass thermometer touching the low figure of 26·5 on the 26th.

Rainfall—Rain season 1925–26	... ..	40·15 inches
For the year 1926	... ..	25·83 „
Number of days on which 0·1 inch of rain or more fell	... ..	77
Number of days on which 0·4 inch of rain or more fell	... ..	64
Highest recorded temperature in the screen..		90° on the 17th July
Lowest recorded temperature in the screen...		36° on the 26th December
Mean temperature for the year	... ..	65°·3
Mean humidity for the year	... ..	73%
Lowest temperature on the grass	... ..	26°·5 on the 26th Dec.
Wettest day	... ..	2·74 ins. on the 21st October

Mean amount of cloud for the year	...	...	...	4·4
Number of days of clear sky	...	...	...	74
Number of days of overcast sky	...	...	...	36
Number of days of thunderstorm	...	...	...	24
Number of occasions when hail fell	...	...	...	1
Number of gales (including gale gusts)	...	...	...	5
Number of days of fog	...	...	...	6
Number of frosts	...	...	...	1

BAROMETER. The mean Barometric reading for the year was 30·056 inches, when reduced to sea level, and to a temperature of 32° Fahr. The highest corrected monthly mean being January 30·180 inches and the lowest October 29·936 inches.

TEMPERATURE. The mean temperature for the year was 65·3 which was 1°·2 above the normal for 40 years. The months of January, February, March, September and October being much warmer than usual. A feature of the year was the low grass temperature of the 26th December, 26°·5, which had not been equalled for many years.

WIND. From three observations daily during the year the direction of the winds prevailing show the frequency of the winds from the Westerly points (see reference table) though as taking due West against due East, East again predominated with 346 observations against West 199. A whole gale was not experienced during the year, but gale gusts were registered on five occasions.

RAINFALL. One inch of rain equals 22,622 gallons per acre, which is equivalent to 101 tons of water per acre. The rainfall for the year was 25·83 inches, equivalent to 665 millimetres which amount is 9·65 inches below the average for 40 years. October was the wettest month with 7·40 inches. No rain was recorded during June and July, and every month except August and October was below the average.

HUMIDITY. The mean relative humidity of the atmosphere (percentage of saturation of the air) was normal for the year. As will be seen by the reference table the average humidity is fairly heavy, though considerable variations occur, sometimes as much as 68%.

These details and comparative tables of the Meteorology of Gibraltar are given in the Annual Meteorological Report of Gibraltar by Mr. Henry Bentley, Public Works Department, Meteorological Observer.

TABLE I.

Month	Barometric pressure reduced to sea level & 32° Fahr.	Maximum and Minimum Temperatures.			Difference from average for 40 years.	Maximum and date.	Minimum and date.
		Maximum	Minimum	Mean			
Jan.	30·180	62·3	53·1	57·7	+ 2·9	67—4th 6th	45—5th
Feb.	30·129	62·8	55·0	58·9	+ 2·9	68—16th	50—7th 13th
Mar.	30·107	65·5	55·1	60·3	+ 2·8	74—17th	46—14th
April	30·063	67·4	55·5	61·5	+ 0·5	73—7th 15th	48—23rd
May	29·992	72·5	56·5	64·5	— 1·5	85—30th	50—18th 19th
June	30·015	76·8	63·4	70·1	— 0·4	85—9th	58—7th 9th 18th
July	29·998	81·3	68·1	74·7	— 0·1	90—17th	62—15th
Aug.	30·038	82·7	70·4	76·5	+ 0·5	88—20th 21st 22nd	66—17th 18th 19th
Sept.	30·068	79·6	70·6	75·1	+ 2·6	89—25th	64—3rd
Oct.	29·936	73·9	66·2	70·0	+ 4·0	80—20th	53—26th
Nov.	30·010	64·1	53·4	58·7	— 2·3	70—6th	46—23rd
Dec.	30·134	59·9	51·0	55·5	— 0·5	68—31st	36—26th
Year...	30·056	70·7	59·9	65·3	+ 1·2	90—17th July	36—26th December

TABLE II.

Month.	Shade Temperature.			Humidity.		
	7th hour.	13th hour.	21st hour.	7th hour.	13th hour.	21st hour.
January ...	54·3	61·1	55·6	84	68	80
February...	56·2	61·9	57·7	81	69	81
March	56·5	63·4	58·8	79	65	76
April	57·3	65·2	60·3	79	63	74
May	58·6	69·9	62·7	79	53	72
June	65·2	73·2	67·4	76	60	72
July	70·1	78·3	72·3	76	59	70
August ...	71·5	80·2	74·8	82	61	75
September	71·6	77·8	73·7	82	70	80
October....	67·5	71·9	68·3	81	72	80
November.	54·9	62·8	56·6	81	65	80
December..	51·9	58·6	54·1	78	67	75
Year	61·3	68·7	63·6	80	64	76

TABLE III.

Month.	Terrestrial Radiation.			Solar Radiation.		
	Temperature on the grass.			Black bulb in vacuum.		
	Mean	Min.	Date.	Mean	Max.	Date.
January ...	48·5	36	5th	98	116	25th
February...	51·6	44	7th	98	121	3rd
			13th			
March	51·9	40	14th	108	131	17th
April	53·2	46	23rd	113	129	7th
			24th			15th
May	54·2	47	18th	123	140	30th
June	61·3	55	5th	123	139	9th
			7th			
July	66·3	57	15th	128	139	24th
August. ...	68·4	63	18th	127	138	21st
			21st			
September	68·2	60	3rd	111	134	2nd
October ...	63·3	46	26th	101	130	10th
November..	48·0	40	24th	97	121	5th
			25th			
December..	45·6	27	26th	86	115	18th
Year	56·7	27	26th December	109	140	30th May

TABLE IV.

Month.	Cloud amount 0-10.			Clear sky days.	Overcast days.
	7th hour.	13th hour.	21st hour.	Less than 0·2 cloud.	More than 0·8 cloud.
January ..	5·5	5·4	4·7	5	6
February...	7·1	6·6	4·8	—	4
March	6·0	5·1	4·2	4	4
April	4·7	5·0	3·1	4	2
May	3·3	3·6	2·0	10	1
June	3·4	3·2	2·0	11	—
July	3·9	2·2	2·4	11	—
August ..	4·7	2·3	1·4	10	—
September	5·1	4·3	3·7	9	1
October ...	7·0	6·3	5·6	1	9
November	5·0	5·2	3·9	6	3
December..	5·3	5·9	4·2	3	6
Year	5·1	4·6	3·5	74	36

TABLE V.

Month.	Rainfall.		Greatest fall in 24 hours beginning at 7 a.m. inches.	Number of days with 0.1 inches or more.	Number of days with 0.4 inches or more.	Rain Season.	
	Total fall inches.	Deviation from average for 40 years.				1925-26	
						Month.	Total fall inches.
Jan.	4.28	—0.79	2.00 on 13th	8	7	Aug. ...	0.05
Feb.	3.74	—0.48	0.99 „ 1st	8	7	Sept. ...	—
March ...	1.65	—3.15	0.37 „ 28th	11	8	Oct. ...	1.34
April ...	0.99	—1.70	0.19 „ 22nd	10	8	Nov ...	19.72
May.....	1.47	—0.28	0.49 „ 1st	6	4	Dec. ...	6.91
June.....	—	—0.48	—	—	—	Jan. ..	4.28
July.	—	—0.04	—	—	—	Feb. ...	3.74
August...	0.16	+0.04	0.10 on 30th	2	2	Mar. ...	1.65
Sept. ...	0.09	—1.30	0.05 „ 25th	2	2	April ...	0.99
October..	7.40	+4.10	2.74 „ 21st	11	8	May ...	1.47
Nov.....	5.68	—0.36	1.27 „ 29th	17	16	June ..	—
Dec.....	0.37	—5.24	0.27 „ 28th	2	2	July ...	—
Year	25.83	—9.68	2.74 on 21st October	77	64	Rain Year	40.15

TABLE VI.

Month.	Winds obs. at 7-13-21 hr. 1095=year.								Calm.	Force 1 to 3	Force 4 to 7	Force 8 or more.
	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.				
January ...	1	2	25	3	2	12	14	22	12	62	19	—
February...	—	—	25	3	3	9	15	12	17	37	30	—
March	—	1	31	3	6	6	21	11	14	52	27	—
April	1	—	15	5	3	11	24	18	13	66	11	—
May	—	—	6	—	16	9	22	15	25	65	3	—
June.....	—	—	33	7	10	9	21	8	2	59	29	—
July	—	1	32	12	13	26	4	1	4	55	34	—
August	—	—	47	12	8	8	4	3	11	58	24	—
September.	1	5	53	1	6	11	6	1	6	39	45	—
October ...	—	—	39	10	2	17	10	7	8	46	39	—
November..	1	3	1	2	3	12	40	23	5	54	31	—
December...	2	4	39	2	—	2	18	26	—	31	62	—
Year.....	6	16	346	60	72	132	199	147	117	624	354	—

VITAL STATISTICS.

An estimate by the Police Authorities at the end of 1926 forms the basis on which the various rates connected with the vital statistics have been calculated in this report.

Data concerning the Naval and Military population are not included in these figures.

1. POPULATION.

The total Civil population is estimated at 17,163 persons of which 16,047 are British subjects other than Maltese, 103 British subjects born in Malta, 170 alien residents in the Bay, and 843 aliens resident in the Town.

The following table shows the fluctuation in population of Gibraltar during recent years :—

	British Subjects Fixed Population.	Alien Subjects Floating Population.	Total Population.
Census April 1911	17,021	2,565	19,586
Police Estimate at end of 1913	16,147	2,301	18,448
Police Estimate at end of 1914	16,086	1,950	18,036
Police Estimate at end of 1915	16,163	1,780	17,943
Police Estimate at end of 1916	16,499	1,947	18,446
Police Estimate at end of 1917	16,549	1,977	18,526
Police Estimate at end of 1918	16,096	1,867	17,963
Police Estimate at end of 1919	16,040	1,733	17,773
Police Estimate at end of 1920	16,181	1,509	17,690
Census June 1921	16,753	1,787	18,540
Police Estimate at end of 1922	16,182	1,145	17,327
Police Estimate at end of 1923.....	16,165	1,181	17,346
Police Estimate at end of 1924	16,177	1,147	17,324
Police Estimate at end of 1925	16,127	1,161	17,288
Police Estimate at end of 1926	16,150	1,013	17,163

VITAL STATISTICS DURING 1926 AND PREVIOUS YEARS.

Year	Estimated Total Population.	Estimated Fixed Population.	How Estimated.	Births.		Deaths.		Crude death rate per 1,000 of Total Civil Population.	Crude death rate per 1,000 of Fixed Civil Population.	Deaths.		
				Number.	Crude rate per 1,000 of Fixed Civil Population.	Total.	Fixed Civil Population.			Under one year.		
										Number.	Rate per 1,000 births.	
1913	18,448	16,147	By Police Census at end of year.	386	23.9	269	253	14.58	15.67	29	75.12	
1914	18,036	16,086		387	24.4	270	225	14.97	13.98	36	93.02	
1915	17,943	16,163		366	22.64	298	271	16.6	16.7	33	90.16	
1916	18,446	16,449		340	20.61	284	276	15.39	16.73	42	123.52	
1917	18,526	16,549		370	22.35	293	272	15.81	16.43	42	113.51	
1918	17,963	16,096		394	24.47	400	386	22.26	23.22	49	124.5	
1919	17,773	16,049		399	24.9	318	308	17.89	19.20	43	107.77	
1920	17,690	16,181		375	23.2	308	297	17.45	18.72	48	128.00	
1921	18,540	16,753		Census June '21.	429	25.6	292	282	16.83	15.74	44	102.5
1922	17,327	16,182			366	22.67	304	298	17.54	13.40	38	103.8
1923	17,346	16,165	365		22.57	294	285	16.95	17.63	40	109.5	
1924	17,324	16,177	Police Census at end of year		360	22.25	298	254	14.66	15.45	33	91.6
1925	17,258	16,127		372	23	292	256	14.80	15.44	31	83.3	
1926	17,163	16,156		427	25	323	276	16.08	16.78	46	107.7	

Total area of City and Territory of Gibraltar 1,387 acres, 2 roads, 3 poles.

These figures represent the population of Gibraltar between the hours of 10 p.m. and 5.30 a.m. To calculate the daily population it will be necessary to add some 5,000 aliens and 1,500 British subjects resident in La Linea who come into Gibraltar daily.

The age and sex distribution of the population of Gibraltar is as follows:—

	Persons of ten years of age and over.		Persons under 10 years of age.	
	Males.	Females.	Males.	Females.
British Subjects	5,373	6,256	2,284	2,134
Maltese	83	20		
Aliens in the Bay	170			
Aliens in the Town	236	607		
Totals	5,862	6,883	2,284	2,134

Total Males 8,146; Females 9,017.

2. DEATHS.

The number of deaths registered for the Civil population of Gibraltar during the year was 276, in addition to 47 persons who died after being landed from the Bay or brought into the Town for treatment.

Two hundred and seventy-one deaths occurred amongst British subjects, and five amongst resident aliens.

The crude death rate per 1,000 of the fixed population is 16.78, that of the total population 16.08.

The standardised death rate of the total population, obtained by multiplying the crude death rate by the factor 1.177 is 18.92 per 1,000.

The following table shows the crude death rate for the past 10 years:—

Year	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Fixed Population	16.43	23.98	19.20	18.72	15.74	18.40	17.63	15.45	15.44	16.78
Total Population	15.81	22.26	17.89	17.45	16.83	17.54	16.95	14.66	14.80	16.08

3. MONTHLY AND QUARTERLY MORTALITY.

The highest number of deaths occurred in December, the lowest in July.

The death rate during the first quarter of the year was the highest, and that of the third the lowest.

The number of deaths registered each month was as follows:—

January.....	28	April.....	24	July.....	19	October.....	21
February ...	28	May	26	August	25	November...	25
March	36	June	26	September ...	27	December...	38
—	—	—	—	—	—	—	—
	92		76		71		84
—	—	—	—	—	—	—	—

These figures include cases landed from ships in the Bay or brought into the Town for treatment.

Causes of death in Civil population in 1926 according
to the International Abbreviated List, with
Age and Sex incidence.

Causes of Death.	All Ages	Under 1 year.		1 year and under 2.		2 years and under 5.		5 years and under 15.		15 years and under 25.		25 years and under 45.		45 years and under 65.		65 years and over.		Deaths in Institutions.
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
1. Enteric Fever	2	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—	—
3. Malaria	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
9. Influenza	2	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—
12. Other epidemic diseases...	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
13. Phthisis (Pulmonary Tuberculosis)	28	—	—	—	—	—	—	—	—	4	3	16	3	6	1	1	—	6
14. Tuberculous Meningitis ..	4	—	1	1	—	—	—	—	1	—	1	—	—	—	—	—	—	1
15. Other Tuberculous diseases	3	—	—	—	—	—	—	—	1	—	1	—	1	—	—	—	—	2
16. Cancer, Malignant disease	22	—	—	—	—	—	—	—	—	—	1	—	1	8	5	4	4	3
17. Meningitis	3	1	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—
18. Cerebral Hæmorrhage and Softening	14	—	—	—	—	—	—	—	—	—	—	1	—	2	3	3	5	2
19. Organic Heart Disease .	21	—	—	—	—	—	—	1	—	1	—	1	1	1	5	4	7	2
21. Chronic Bronchitis	6	—	—	—	—	—	—	—	—	—	—	—	—	3	—	3	—	—
22. Pneumonia	29	5	3	1	1	1	—	—	1	—	—	5	—	3	1	4	4	5
23. Other diseases of res- piratory system	2	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	—	—
24. Diseases of the Stomach.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1
25. Diarrhœa and Enteritis (under 2 years) .	17	8	8	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
26. Appendicitis & Typhlitis	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1
27. Hernia Intestinal obstruction	4	1	—	—	—	—	—	—	—	—	—	—	1	—	1	1	—	1
28. Cirrhosis of Liver... ..	2	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—
29. Acute Nephritis and Bright's Disease	8	—	—	—	—	1	—	—	—	1	—	1	2	—	3	—	—	4
32 Other accidents and diseases of pregnancy and parturition	2	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	1
33. Congenital Debility and Malformation (includ- ing premature birth)... ..	15	9	5	1	—	—	—	—	—	—	—	—	—	—	—	—	—	6
34. Senility	24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	17	15
35. Violent Death (excluding Suicides)	3	1	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—
37. Other defined diseases ...	56	2	2	1	1	1	—	3	1	—	—	8	1	9	5	11	11	20
38. Diseases ill-defined or unknown	5	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	3	1
Totals	276	27	19	5	3	4	—	5	5	5	6	27	11	40	24	43	52	72

DEATHS REGISTERED IN THE CITY OF GIBRALTAR DURING THE YEAR 1926.
(Civil Population).

Cause of Death.	Sex.		Ages.							Districts.			Public Institutions.					
	Males.	Females.	Under 1 year.	1 year & under 2.	2 years & under 5.	5 years & under 15.	15 years & under 25.	25 years & under 45.	45 years & under 65.	65 years & over.	North.	Central.	South.	Colonial Hospital.	Gibraltar Home for Sick and Aged.	Little Sisters of the Poor.	Lunatic Asylum.	Gavino's Asylum.
ALL CAUSES.	156	120	46	8	4	10	11	38	64	95	7	232	37	47	4	14	4	3
I.—Epidemic, Endemic and Infectious Diseases.....	28	16	1	1	2	3	9	14	11	3	2	36	6	8	2	...	...	...
II.—General Diseases not included in I	18	11	—	1	...	1	...	3	16	11	2	27	3	2	1	...	...	...
III.—Diseases of the Nervous System and Sense Organs	18	15	2	2	...	1	1	6	11	25	1	26	7	7	...	...	...	...
IV.—Diseases of the Circulatory System	21	21	...	...	...	1	1	4	11	11	...	37	4	6	...	...	...	...
V.—Diseases of the Respiratory System	26	10	8	2	1	1	...	5	7	12	2	32	2	4	4	...	...	...
VI.—Diseases of the Digestive System	15	11	17	1	...	1	...	2	3	2	...	25	1	4	4	...	...	...
VII.—Non-Veneral Diseases of the Genito-Urinary System and Annexa	7	2	...	...	1	...	1	1	2	4	...	9	...	5	1	...	...	...
VIII.—The Puerperal State .....	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...
IX.—Diseases of the Skin and Cellular Tissue.....	...	1	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
X.—Diseases of the Bones and Organs of Locomotion	2	...	...	...	...	2	...	...	...	...	...	2	...	2	...	...	...	...
XI.—Congenital Malformations.....	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
XII.—Diseases of Early Infancy	1	6	...	...	...	...	...	...	...	24	...	14	...	6	...	...	...	...
XIII.—Old Age	9	18	1	...	...	...	...	...	2	24	...	12	...	...	1	...	...	...
XIV.—External Causes	6	3	1	...	...	...	...	...	1	3	...	3	...	1	...	...	...	...
XV.—Ill-Defined Diseases.....	2	4	1	...	...	...	...	1	1	3	...	5	1	1	...	...	...	...
I.—Enteric Fever	2	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Malaria	1	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...
Influenza	1	1	...	...	...	...	...	...	1	1	...	1	...	1	...	...	...	...
Dysentery .....	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Encephalitis Lethargica .....	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Tuberculosis—	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Respiratory System	21	7	...	...	...	...	...	13	7	1	1	24	3	4	2	...	...	...
Central Nervous System	1	3	1	1	...	1	1	1	...	...	...	4	1	1	...	...	...	...
Vertebral column .....	...	2	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
Other organs	1	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...
Disseminated	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Syphilis .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
II.—Cancer, Malignant disease Pharynx, oesophagus, stomach, liver and annexa	7	5	...	...	...	...	...	1	6	5	1	9	2	1	...	...	...	...
Peritoneum, intestines and rectum.	...	1	...	...	...	...	...	...	1	...	...	1	...	...	1	...	...	...
Female genital organs .....	...	2	...	...	...	...	...	...	1	1	...	1	...	...	...	...	...	...
Breast .....	...	...	...	...	...	...	...	...	4	2	1	2	1	...	...	...	...	...
Other or unspecified organs	6	...	...	...	...	...	...	...	...	...	...	4	1	...	...	...	...	...
Rheumatic Fever	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Chronic rheumatism, Osteoarthritis, Gout .....	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Diabetes	3	2	...	...	...	...	...	...	2	1	...	5	...	...	...	...	...	...
Anemia, Chlorosis .....	...	2	...	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...
Other general diseases	1	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
III.—Meningitis	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Tabes dorsalis	1	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...
Other diseases of the spinal cord	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Cerebral Hemorrhage, Apoplexy, &c.	6	8	...	...	...	...	...	1	5	8	...	13	1	2	2	...	...	...
Paralysis of unslated origin	1	5	...	...	...	...	...	...	2	3	...	4	...	...	...	...	...	...
Other forms of insanity	2	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...
Epilepsy	2	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...
Convulsions (non-puerperal)	2	...	1	...	...	...	...	...	1	...	...	2	1	1	...	...	...	...
Diseases of the ear and of the mastoid sinus.....	2	...	...	...	...	...	...	2	...	...	...	2	...	...	...	...	...	...
IV.—Acute endocarditis and myocarditis.	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Angina pectoris	2	15	...	...	...	...	...	...	10	12	...	21	3	1	...	...	...	...
Other diseases of the heart.....	10	5	...	...	...	...	...	...	1	...	...	9	...	...	...	...	...	...
Diseases of the arteries.....	8	...	...	...	...	...	...	...	1	...	...	12	...	...	...	...	...	...
Embolism and thrombosis (not cerebral) .....	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
V.—Bronchitis	6	7	...	...	...	...	...	...	3	5	...	18	2	...	...	...	...	...
Bronco-pneumonia	12	3	7	2	...	...	...	5	4	3	1	9	...	2	...	...	...	...
Lobar pneumonia.....	7	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Congestion and hemorrhagic infarct of lung	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
VI.—Ulcer of the stomach or duodenum.	1	8	16	1	...	...	...	...	1	...	...	17	1	1	...	...	...	...
Diarrhea and Enteritis	10	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...
Appendicitis	1	2	1	...	...	...	...	...	1	1	...	1	...	1	...	...	...	...
Hemida, Intestinal obstruction	2	1	...	...	...	...	...	...	2	3	...	2	...	4	...	...	...	...
Cirrhosis of the liver.....	1	2	...	...	...	...	...	...	1	...	...	8	...	...	...	...	...	...
VII.—Chronic nephritis	6	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...
Diseases of the urethra, urinary abscess, &c.	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
VIII.—Other accidents of childbirth	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Childbirth not assignable to other headings (puerperal insanity) .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
IX.—Other diseases of the skin and its annexa .....	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
X.—Diseases of the bones	2	...	...	...	...	2	...	...	...	...	...	1	...	1	...	...	...	...
XI.—Congenital hydrocephalus	1	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...
XII.—Congenital debility, scolium and icterus	3	1	4	...	...	...	...	...	...	...	...	3	...	4	...	...	...	...
Premature birth, injury at birth	6	4	10	...	...	...	...	...	...	...	...	10	...	...	...	...	...	...
Other diseases peculiar to early infancy .....	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
XIII.—Old Age	6	18	...	...	...	...	...	...	2	24	...	12	...	...	...	...	...	...
XIV.—Accidental drowning	2	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...
Infanticide	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
XV.—Sudden death .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cause of death unstated or ill-defined	2	3	1	...	...	...	...	...	1	2	...	4	1	1	...	...	...	...

MATERNITY AND CHILD WELFARE.

STATISTICS.

The number of children born during the year 1926 was 427, and the birth rate was 25, which is the highest recorded for many years, the average since 1916 being 23·3.

Of the 427 births, 217 were males and 210 females.

The following is the birth rate of Gibraltar compared with that of England and Wales and Malta :—

Year	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
England and Wales	17·7	17·7	18·5	25·4	22·4	20·6	19·7	18·8	18·3	17·8
Malta	—	—	—	—	—	36·4	34·5	34·6	33·3	
Gibraltar...	22·3	24·4	24·9	23·2	25·6	22·6	22·5	22·2	23	25·2

INFANTILE MORTALITY.

The infantile mortality rate for any district is the number of deaths of infants under one year of age per 1,000 of the births which occurred in the same year.

The number of babies under one year of age who died in Gibraltar during 1926 was 46, and the number of births for that year was 427. The infantile mortality rate is therefore 107·9.

This is an increase of 24 per 1,000 births as compared with 1925.

The adverse effect of a somewhat higher infant mortality on the natural increase in population is counteracted by the high birth rate prevailing.

The principal causes of death were :—

Ante Natal—

Atrophy, Debility and Marasmus...	...	4
Premature Birth	... ..	10

Post Natal—

Gastro Enteritis	... ..	16
Pneumonia ... ..	...	8

Most of the deaths due to ante natal causes occurred during the first four weeks of life. Those due to post natal causes occurred chiefly in children over a month old.

Death during the first four weeks of life are caused by adverse influences operating on the child before or at birth. To ensure a reduction, ante natal supervision of the mother and an efficient midwifery service are imperative. Expectant mothers are now beginning to attend at the Maternity Department of the Colonial Hospital for advice. The standard of the health of mothers attending at the Welfare Centre was, in

many cases, low on account of conditions of unemployment existing and difficulty in providing the right kind of food. There was little time or opportunity for pre natal care, and practically no woman receive skilled supervision during pregnancy.

There is also no doubt that ante natal causes are influenced by the unsatisfactory housing conditions and conditions of overcrowding prevailing in Gibraltar.

Amongst the post natal causes in children over a month old, acute respiratory diseases such as bronchitis and pneumonia and gastro-intestinal disorders are the chief enemies of infant life. With regard to the former, overcrowding is conducive to the spread of catarrhal infections which rapidly develop into pneumonia in the infant. Regarding the latter, fly prevalence is an important factor.

There appears to be no special reason why the infant mortality rate should have risen from 83 in 1925 to 107·7 in 1926. There has been an absence of any serious epidemic, mothers are becoming better educated due, to some extent, to the educative work at the Welfare Centre and to home visiting by the trained nurse.

The whole of the imported milk supply is boiled before distribution; sanitary conditions have much improved; improved methods of removal and disposal of household refuse have been introduced and there is a double collection during the summer months.

A considerable increase in motor traffic and a decrease in horse traffic has occurred, therefore, roads are cleaner and conditions for fly breeding are less favourable.

All these conditions play a part in the reduction of infantile mortality, and it would be difficult to say which is the most important.

The work of charitable organisations and the Destitute Sick and Tuberculosis Scheme continues to be of much assistance in improving conditions among women and children.

Whilst on the subject of infantile mortality the following extract from * "General Remarks Extracted from S.M.O.'s Journal for H.M.S. *Barham*," by Surgeon Commander S. F. Dudley, O.B.E., M.D., D.P.H., D.T.M. and H., R.N., is of interest:—

"As regards the possible effect of flies on public health it is interesting to contrast Gibraltar with Malta in regard to infantile mortality among two otherwise similar communities. In Gibraltar an efficient public health service does all it can to render the breeding places of flies harm-

*Journal of the Royal Naval Medical Service, January, 1927 (page 63).

less, and there are few goats. Infantile mortality has been proved (in England) to be correlated with fly prevalence. In 1923 infantile mortality per 1,000 births was 69 in England and Wales, 100 in Gibraltar and 280 in Malta. This colossal loss of infants may well in part be due to the flies which one sees swarming all over the offal and dung in the street and food in the poorer shops and houses. However, it must be confessed there is another possibility of infantile mortality in Malta. Every Maltese inhabitant must come in constant contact with *Brucella melitensis* in goat's milk from the earliest ages. Even if the infant does not get goat's milk, often its mother's milk will contain *B. melitensis*, and it is only those who are born with or acquire resistance to the organism who can escape undulant fever. I have been unable to learn of any investigation on the subject of undulant fever in infants, but it seems logical to suppose flies and undulant fever microbes are not conducive to healthy infancy."

The following table shows the infantile mortality for the United Kingdom, Malta and Gibraltar:—

INFANTILE MORTALITY PER 1,000 BIRTHS, 1911—1926.

Year	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
England and Wales ...	130	95	108	105	110	91	96	97	89	80	83	77	69	75	75	70
Malta	—	—	—	—	—	—	—	—	—	—	—	261	280	268	271	
Gibraltar	119	78	75	93	90	123	113	124	108	128	102	103	109	91	83	107

WELFARE CENTRE.

The Centre is very fortunate in having excellent accommodation in the City Hall.

Meetings are held on alternate Thursday afternoons.

During the year there were 1,379 attendances of mothers bringing 142 children to be weighed.

The following is the amount of milk, Virol, and other food preparations, &c., distributed during the year, either free or at half cost, to nursing mothers and infants under 2 years of age:—

Milk	3,324 tins
Malted Glaxo...	10 „
Glaxo	355 „
Virol... ..	187 pots
Feeders	87

During the year the trained nurse has paid 281 visits to homes of children, this keeping them under constant observation.

The distribution of infant clothing by the Gibraltar Needlework Guild has been of the greatest assistance for mothers in poor circumstances.

*MATERNITY WARD—COLONIAL HOSPITAL.

The Maternity Department had again a record year with 115 patients. In 1925 there were 75, 48 in 1924 and 22 in 1923. The number of births was 91. On many occasions extra beds had to be put up in the wards. Many expectant mothers have already come two or three times to the Department, and if the numbers go on increasing the provision of extra accommodation will have to be faced.

*CHILDREN'S WARD—COLONIAL HOSPITAL.

The Children's Ward showed a smaller daily average—9 compared with 16—but the total number treated was 157, or only 7 less than in 1925, while the maximum daily number was 21, an increase of two over last year's figure. The marked drop in the average number was due to the absence of cases of gastro-enteritis and other diseases requiring prolonged treatment.

MIDWIVES.

Under the Midwives' Ordinance, 1907, there are 6 midwives on the register.

None of these are trained nurses.

One lady is undergoing an instructional course in midwifery at the Colonial Hospital in accordance with the provisions of the Midwives' Ordinance, 1907.

Registered midwives attended 263 births during the year, or 62·06 per cent. of the total births. The number attended by unregistered midwives was 2.

In three instances midwives summoned medical help which was paid out of Colonial Government funds.

Forty-five expectant mothers in poor circumstances had their confinements paid out of Colonial Government funds.

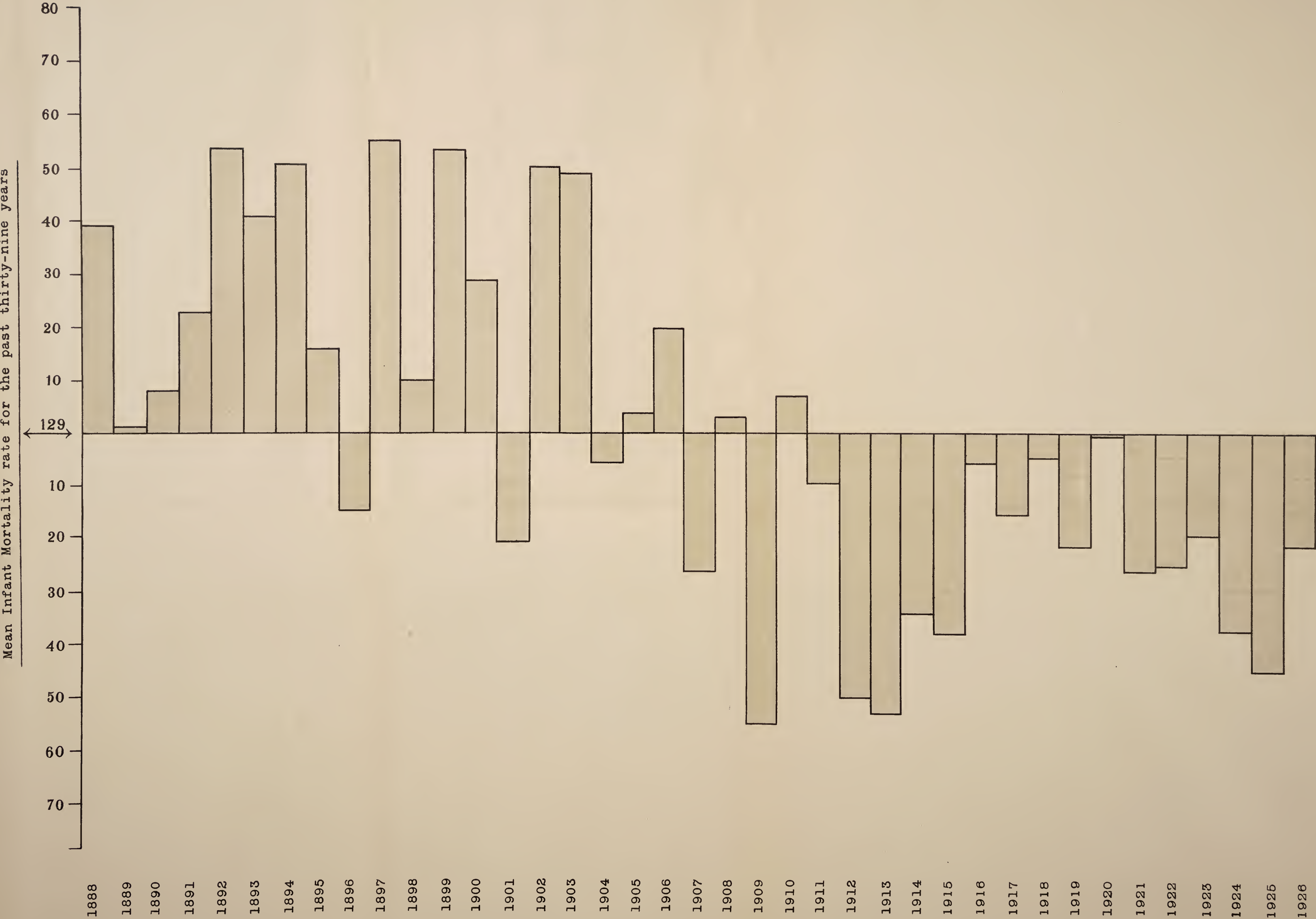
Periodical inspections of midwives were carried out during the year in accordance with the Midwives' Ordinance, 1907. On the whole the bags, &c., were found satisfactory.

No midwife gave cause for suspension during the year.

*Taken from the Annual Medical Report for the year 1926.

INFANTILE MORTALITY

DIAGRAM SHOWING THE ANNUAL DEPARTURE FROM THE MEAN OF THE 39 YEARS 1888-1926



CAUSES OF, AGES AT, DEATH OF INFANTS UNDER ONE YEAR
OF AGE IN GIBRALTAR DURING 1926.

Cause of Death.	Under 1 week.	1—2 weeks.	2—3 weeks.	3—4 weeks.	Total 4 weeks.	1—3 months.	3—6 months.	6—9 months.	9—12 months.	Total infant deaths under 1 year.
1. Common Infectious Diseases	—	—	—	—	—	—	—	—	—	—
2. Tuberculosis	—	—	—	—	—	—	—	—	—	—
3. Pneumonia & Bronchitis	—	—	—	—	—	2	1	5	—	8
4. Enteritis	—	—	1	—	1	2	2	8	3	16
5. Syphilis..... ..	—	—	—	—	—	—	—	—	—	—
6. Complications of Birth...	—	—	—	—	—	—	—	—	—	—
7. Congenital Malformation	—	—	—	—	—	—	—	—	—	—
8. Premature Birth	7	2	—	—	9	1	—	—	—	10
9. Atrophy, Debility and Marasmus	—	1	—	—	1	2	1	—	—	4
10. Other Diseases	3	—	—	—	3	2	3	—	—	8
(Meningitis 2) (Asphyxia 1) (Infantile Eclampsia 1) (Other conditions 4)										
Totals	10	3	1	—	14	9	7	13	3	46
Death rate in each age period per 1,000 births	23·3	7	2·3	—	32·7	21	16·3	30·3	7	107·6
Percentage of total infant deaths occurring in each age period	21·7	6·5	2·1	—	30·4	19·5	15·2	28·2	6·5	—

MEDICAL INSPECTION OF SCHOOL CHILDREN.

Extract from the Medical Report by Surgeon, Colonial Hospital:—

The medical inspection of school children attending the public schools has been carried out on the same lines as in former years by the School Nurse and the Assistant Surgeons, Colonial Hospital. In April, 7 schools were visited, in May, 9; in June, 5; in October, 8; in November, 6; in December, 4; in January, 9; in February, 6; and in March, 8.

Again a large number of the pupils were picked out by the Nurse for medical inspection, but only about the half of them presented themselves. The total was 797 compared with 975 and 367 in the two preceding years. Of these 440, or 55 per cent. actually attended, compared with 78 per cent. in 1925-26, and 60 per cent. in 1924-25.

The general statistics are as follows:—

(a) Defects of Vision	...	..	...	...	...	100
(b) Skin Diseases and Conditions...	...	...	...	...	...	427
(c) Other Diseases	...	...	...	...	...	270

Of class (a) 15 were provided with spectacles free of cost. A few pupils who were taken by their parents to consult an eye-specialist were also supplied with glasses.

Of class (b) 48 suffered from scabies, 41 from impetigo and septic sores, 15 from contagious warts, 3 from ring-worm, and 3 from verminous heads. A specially large number in this group did not attend at the Hospital.

Of class (c), debility and anæmia accounted for 66. The remainder formed small groups of such ailments as nasal discharge, discharging ears, adenoids and enlarged tonsils.

The School Dentist continued to treat such children as chose to attend his consultations after recommendation by the School Nurse, Surgeons or Teachers. His monthly reports show that his services are appreciated. His statistics bring out that during 1926, 1,113 children attended, and the work he has done is represented by the large total of 4,181 operations, extractions of temporary teeth 1,456, extractions of permanent teeth 182, fillings 37 and cleanings 123.

In addition Mr. Garesse gave lectures on oral hygiene in all the schools but two. The results are considered by him as unsatisfactory, and in his enthusiasm for his work he suggests the free provision of tooth-brushes, and a yearly competition amongst all the scholars in classes of ten. While sympathising with him in his disappointment with the result of his voluntary labours, and anxious to further his efforts to

educate children in the care of their teeth, I fear that in the great majority of cases an offer to supply tooth-brushes would be met with the same apathy as I experienced with the free issue of spectacles. At the same time I suggest that as an experiment for six months any child who makes an application for a brush and promises to use it be given a written order to a contractor to supply it free of charge. The limited quantity of fresh water in the houses of the poor in Gibraltar militates against the care of the teeth.

Mr. Garesse's work in his clinique and in the schools is of the utmost importance to the health of the young generation, and it should be continued even though the immediate results are small in comparison with the effort.

PREVALENCE AND CONTROL OF INFECTIOUS DISEASES.

The following infectious diseases are notifiable in Gibraltar in accordance with the provisions of "The Public Health Ordinance, 1907" :—

Venereal Diseases	Ophthalmia Neonatorum
Plague	Encephalitis Lethargica
Pneumonia	Influenzal Pneumonia
Small Pox	Chicken Pox
Cholera	Yellow Fever
Diphtheria	Erysipelas
Measles	Poliomyelitis
Membranous Croup	Acute Dysentery
Pulmonary Tuberculosis	Scarlet Fever
Cerebro-Spinal Fever	Acute Epidemic Gastro-Enteritis
Typhus Fever	Enteric Fever
Relapsing Fever	Puerperal Fever
Undulant Fever	

Laboratory work connected with notifiable diseases is done free of charge at the City Council Laboratories for residents of Gibraltar and Gibraltarians resident in the neighbourhood.

GENERAL INCIDENCE.

The number of cases of infectious disease notified during the year, exclusive of Naval and Military cases, was 390 of which 99 were Pneumonia, 26 Chicken Pox and 74 Measles.

There were no cases of Small Pox or Undulant Fever.

Measles and Scarlet Fever were of a mild type and there were no deaths due to either of these diseases.

Twenty deaths were attributed to one or other of the eight principal acute infectious diseases, eighteen of these being due to Diarrhoea and Enteritis and two to Enteric Fever, equivalent to a zymotic death rate of 1·2 per 1,000.

QUARTERLY INCIDENCE OF NOTIFIABLE INFECTIOUS DISEASES.
CIVIL POPULATION.

Disease	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total	Deaths
Diphtheria	13	7	1	9	30	—
Chicken Pox	5	15	1	5	26	—
Measles	4	21	48	1	74	—
Pneumonia	37	23	22	17	99	29
Pulmonary Tuberculosis ...	9	12	10	9	40	28
Venereal Diseases	15	6	1	4	26	1
Erysipelas	6	3	10	6	25	—
Influenzal Pneumonia	4	—	—	2	6	1
Scarlet Fever	4	2	3	4	13	—
Rubella.....	2	2	—	—	4	—
Enteric Fever	1	3	—	5	9	2
Ophthalmia Neonatorum...	1	—	—	—	1	—
Dysentery.....	1	2	2	4	9	1
Paratyphoid "A"	—	2	—	2	4	—
Encephalitis Lethargica ...	—	1	1	—	2	1
Gastro Enteritis	—	11	8	3	22	18
Totals	102	110	107	71	390	81

QUARTERLY INCIDENCE OF CASES OF NOTIFIABLE INFECTIOUS
DISEASES LANDED FROM THE BAY OR BROUGHT INTO
THE TOWN FOR TREATMENT.

Disease	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total	Deaths
Pneumonia	4	—	1	1	6	6
Venereal Diseases	4	—	—	—	4	—
Erysipelas.....	1	—	—	—	1	—
Measles.....	3	—	—	—	3	—
Rubella	1	—	—	—	1	—
Chicken Pox.....	1	1	—	—	2	—
Enteric Fever	—	2	—	—	2	1
Pulmonary Tuberculosis ...	—	—	2	1	3	1
Diphtheria	—	1	1	—	2	—
Scarlet Fever	—	—	—	1	1	—
Totals	14	4	4	3	25	8

WEEKLY NOTIFICATION OF CASES OF INFECTIOUS DISEASES DURING 1926.

DISEASE.	JANUARY				FEBRUARY				MARCH					APRIL				MAY					JUNE				JULY				AUGUST					SEPTEMBER				OCTOBER				NOVEMBER					DECEMBER				TOTALS.
	4	11	18	25	1	8	15	22	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	4	11	18	25	2	9	16	23	30	7	14	21	31	
Diphtheria	2	1	1	1	2	1	1	1	2	...	1	...	3	2	1	1	1*	...	1*	...	1	1	...	3	1	2	1	1	30—2*	
Chicken Pox	3	...	1	1	1*	3	1*	...	1	3	...	5	1	1	...	1	...	1	1	...	1	1	...	2	26—2*			
Measles	3	...	1	...	2*	1*	3	...	2	3	1	...	2	1	1	1	1	8	6	4	6	7	9	5	...	6	2	1	1	...	74—3*			
Pneumonia	1	2	3	4	6	4	3	4	2	1	1	1	3	4	3	1	1	4	1	1	3	3	1	3	1	3	...	3	1	2	...	5	1	1	2	...	1	...	2	...	1	1	2	3	4	...	3	99—6*
Tubercle of Lung	1	1	1	...	1	2	1	...	1	1	2	2	1	...	1	1	1	...	3	...	1	1	2	1	1*	1	...	2	1*	...	1	1	1	1*	...	1	1	...	2	2	...	3	40—3*
Venereal Diseases	2	1	4	1	1	1	1	3	1*	1*	1*	1	...	2	2	...	2	1	1	...	1	1	1	...	26—4*		
Erysipelas	1	...	1	1	...	1	1*	1	...	1	1	...	1	1	1	1	3	1	...	1	...	3	2	2	2	25—1*			
Scarlet Fever	1	1	...	2	1	...	1	1	1	1	1*	1	...	1	...	2	...	13—1*		
Influenzal Pneumonia...	1	1	1	1	2	...	6			
* Rubella...	1	1	...	1*	1	1	4—1*			
Enteric Fever	1	1*	1	1*	...	1	...	1	1	...	2	1	1	...	9—2*	
Ophthalmia Neonatorum	1	1	...		
Dysentery	1	1	1	1	1	3	1	9			
Paratyphoid Fever	1	1	2	4			
Encephalitis Lethargica	1	1	2			
Gastro-Enteritis	5	1	5	1	2	1	...	1	2	1	1	1	1	...	22			

* Cases landed from the Bay or brought into the Town for treatment.

Age and Sex incidence of notifiable Infectious Diseases amongst Civil Population during 1926.

Notifiable Disease.	NUMBER OF CASES NOTIFIED.														Districts.		Total cases re- moved to Hospital				
	At all Ages	Under 1.		1 and under 5.		5 and under 15.		15 and under 25.		25 and under 45.		45 and under 65.		65 and Over.		North.		Central.	South.	Residents.	Non- Residents.
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.						
Diphtheria	30	1	—	9	6	8	4	1	—	1	—	—	—	—	—	—	24	6	9	2	
Chicken Pox	26	1	2	4	4	10	4	—	—	—	—	—	—	—	—	—	23	3	2	2	
Measles	74	2	2	19	15	19	13	—	4	—	—	—	—	—	—	—	21	53	4	2	
Pneumonia	99	9	6	25	17	5	8	1	1	7	2	9	7	1	—	—	90	6	9	3	
Pulmonary Tuberculosis	40	—	—	1	—	—	—	4	7	11	—	9	—	—	—	—	35	5	9	6	
Veneral Diseases	26	—	—	—	—	—	—	11	—	15	—	—	—	—	—	—	22	3	9	3	
Erysipelas	25	—	—	—	—	2	—	—	1	2	—	1	—	—	—	—	22	3	2	4	
Scarlet Fever	13	—	—	1	2	5	4	1	—	—	—	—	—	—	—	—	10	2	3	1	
Influenzal Pneumonia	6	—	—	—	—	—	1	—	—	2	—	—	—	—	—	—	6	—	—	—	
Rubella	4	—	—	—	—	2	1	1	—	—	—	—	—	—	—	—	3	1	—	1	
Enteric Fever	9	—	—	—	—	1	1	—	2	1	—	—	1	—	—	—	8	1	2	2	
Paratyphoid	4	—	—	—	—	2	1	—	—	—	—	—	—	—	—	—	4	—	—	—	
Ophthalmia Neonatorum	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	
Dysentery	9	2	—	—	—	—	—	—	2	2	—	—	—	—	—	—	8	—	—	—	
Encephalitis Lethargica	2	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	2	—	2	—	
Gastro Enteritis	22	6	7	4	2	—	1	—	—	1	—	1	—	—	—	—	20	2	2	—	
Totals	330	22	17	66	48	54	39	19	18	42	14	23	18	2	8	7	299	81	49	25	

Monthly notification of notifiable Infectious Diseases.

Months.		Cases occurring amongst the Civil Population.																			
		Diphtheria	Chicken Pox	Measles	Pneumonia	Tubercle of Lung	Venereal Diseases	Erysipelas	Scarlet Fever	Influenzal Pneumonia	Rubella	Enteric Fever	Paratyphoid	Ophthalmia Neonatorum	Dysentery	Encephalitis Lethargica	Gastro-Enteritis	Cases	Deaths	Cases	Deaths
January	.....	7	4	4	10	3	8	2	1	2	1	1	1	1	1	1	1	1	1	1	1
February	.....	1	1	—	20	4	4	1	—	—	1	—	—	—	—	—	—	—	—	—	—
March	.....	5	—	—	7	2	3	1	—	2	1	—	—	—	—	—	—	—	—	—	—
April	.....	3	3	5	9	5	2	2	3	—	—	1	1	—	—	—	—	—	—	—	—
May	.....	3	10	6	5	2	4	1	—	—	—	2	1	—	—	—	—	—	—	—	—
June	.....	1	2	10	5	5	—	—	2	—	2	1	—	—	—	—	—	—	—	—	—
July	.....	1	1	25	10	1	1	4	—	—	—	—	—	—	—	—	—	—	—	—	—
August	.....	—	—	20	8	2	—	4	3	—	—	—	—	—	—	—	—	—	—	—	—
September	.....	—	—	3	4	2	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—
October	.....	4	1	—	4	1	2	2	—	—	—	2	2	—	—	—	—	—	—	—	—
November	.....	3	2	—	3	1	—	2	—	—	—	2	—	—	—	—	—	—	—	—	—
December	.....	2	2	1	10	7	2	2	1	2	1	1	—	—	—	—	—	—	—	—	—
Totals	.....	30	26	74	69	29	40	28	26	1	25	13	6	1	4	9	2	4	1	9	1

Monthly notification of notifiable Infectious Diseases.

Months.		Cases landed from the Bay or brought into the Town for treatment.															
		Pneumonia		Venereal Diseases		Erysipelas		Measles		Rubella		Chicken Pox		Enteric Fever		Pulmonary Tuberculosis	
		Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
January	...	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1
February	...	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
March	...	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
April	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
May	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
June	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
July	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
August	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
September	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
October	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
November	...	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
December	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals		9	9	4	1	1	1	3	1	1	1	2	1	2	1	3	1

ENTERIC FEVER.

Nine cases of Enteric Fever were notified during the year as compared with eleven during 1925. These cases were proved by bacteriological and serological tests to have the disease.

Two of these cases proved fatal.

Two cases were also landed from shipping in the Bay or brought into the town for treatment.

This disease is much less prevalent in Gibraltar than formerly; the cases were sporadic and occurred throughout the year in different parts of the Colony, and appeared to have no relation to one another. Two of them had recently been spending some time in Spain.

Although each case was carefully enquired into the probable source of infection could not be traced.

All the cases were adequately isolated either in hospital or at home.

The incidence of the disease, as compared with previous years, is shown below:—

Year.	Cases notified.	Deaths.	Death rate per 1,000 of Population.	Attack rate per 1,000 of Population.
1917	43	4	·24	2·6
1918	31	3	·18	1·9
1919	8	1	·06	·49
1920	24	2	·12	1·4
1921	21	6	·35	1·2
1922	20	—	—	1·2
1923	19	2	·12	1·1
1924	17	2	·12	1
1925	11	3	·18	·68
1926	9	2	·12	·55

In addition to these there were four cases of paratyphoid which were of a mild type and all recovered.

SEASONAL PREVALENCY OF ENTERIC FEVER IN GIBRALTAR DURING 1926.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Local Cases	—	1	—	—	2	1	—	—	—	2	2	1	9
Imported Cases	—	—	—	1	1	—	—	—	—	—	—	—	2

AGE AND SEX DISTRIBUTION.

Age	Under 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 to 45		45 to 65		65 & Over		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Cases	—	—	3	—	1	—	—	1	—	1	—	1	—	1	1	—	—	—	5 4
Deaths ...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	2 —

DIPHTHERIA.

Thirty cases were notified during the year as compared to thirty-one in 1925. There were no deaths. The disease continues to be of a mild type. There was no localised outbreak of cases occurring throughout the year. None of the cases were related to the milk supply. Antitoxin was used in all cases.

Nine cases were removed to hospital, and twenty-one treated at home.

Schick Test.

The testing of children for their immunity to Diphtheria and the immunisation of those who require it has not yet been adopted in Gibraltar. The education of the public can alone popularise this method, which is now so extensively employed with success. The mild type of the disease in Gibraltar makes it difficult for the public to appreciate the desirability of this procedure at present.

Diphtheria Antitoxin.

Supplies of Diphtheria Antitoxin are kept at the Public Health Department, City Hall.

The amount supplied to medical practitioners during the year was nearly 500,000 units.

Experience has shown that for the purposes of treatment it is seldom safe to rely on any dosage which is less than 8,000 units. Whatever the age of the patient may be, smaller doses are now never employed.

Swabs.

The result of the examination of Swabs is telephoned and written confirmation follows.

The incidence of the disease, as compared with previous years, is shown below:—

Year.	Cases notified.	Deaths.	Death rate per 1,000 of Population.	Attack rate per 1,000 of Population.
1917	4	—	—	·24
1918	7	—	—	·43
1919	3	—	—	·18
1920	6	—	—	·37
1921	7	1	·05	·42
1922	30	3	·18	1·8
1923	21	2	·12	1·2
1924	19	2	·12	1·1
1925	31	—	—	1·9
1926	30	—	—	1·8

SEASONAL PREVALENCY OF DIPHTHERIA
IN GIBRALTAR DURING 1926.

Month	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sep.	Oct.	Nov	Dec.	Total
Local Cases	7	1	5	3	3	1	1	—	—	4	3	2	30
Imported Cases...	—	—	—	—	—	1	1	—	—	—	—	—	2

AGE AND SEX DISTRIBUTION.

Age	Under 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 to 45		45 & over		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	6	3	4	3	8	4	—	—	—	—	1	—	1	—	—	—	20	10
Deaths	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

MEASLES.

Measles is a notifiable disease in Gibraltar and 74 cases occurred during the year.

Practically all these cases were treated at home and there were no deaths, the disease being of a mild nature and complications rarely occurring.

The incidence of the disease, as compared with previous years, is shown below :—

Year.	Cases notified.	Deaths.	Death rate per 1,000 of Population.	Attack rate per 1,000 of Population.
1917	11	—	—	·66
1918	25	2	·12	1·5
1919	73	—	—	4·5
1920	115	1	·06	7·1
1921	388	6	·35	23·1
1922	305	4	·24	18·8
1923	31	2	·12	1·9
1924	147	4	·24	9·0
1925	18	—	—	1·1
1926	74	—	—	4·5

SEASONAL PREVALENCY OF MEASLES IN GIBRALTAR
DURING 1926.

Month	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Local Cases.....	4	—	—	5	6	10	25	20	3	—	—	1	74
Imported Cases ...	—	2	1	—	—	—	—	—	—	—	—	—	3

AGE AND SEX DISTRIBUTION.

Age	Under 1		1 to 2		2 to 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 & over		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Cases	2	2	6	4	3	5	9	7	17	12	3	—	2	—	2	—	—	40	34
Deaths	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

PNEUMONIA.

There were 99 cases of this disease notified during the year, with 29 deaths.

The deaths from this disease occurred chiefly in children under 1 year and in old people.

SEASONAL PREVALENCY OF PNEUMONIA IN GIBRALTAR
DURING 1926.

Month	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Local cases ...	10	20	7	9	9	5	10	8	4	4	3	10	99
Imported cases	1	—	3	—	—	—	1	—	—	—	—	1	6

SCARLET FEVER.

Thirteen cases of Scarlet Fever occurred during the year. There were no deaths. The disease was of a mild type and complications were few.

The *Dick Test* which has been evolved in America by the Dicks for estimating the susceptibility of individuals to Scarlet Fever and for the immunisation of individuals has not so far been employed in Gibraltar.

The technique is practically the same as in the Schick test for Diphtheria.

The incidence of the disease, as compared with previous years, is shown below :—

Year.	Cases notified.	Deaths.	Death rate per 1,000 of Population.	Attack rate per 1,000 of Population.
1917	—	—	—	—
1918	—	—	—	—
1919	1	—	—	·06
1920	6	—	—	·37
1921	13	—	—	·77
1922	9	—	—	·55
1923	218	5	·30	13·4
1924	12	1	·06	·74
1925	5	—	—	·31
1926	13	—	—	·80

SEASONAL PREVALENCY OF SCARLET FEVER IN GIBRALTAR DURING 1926.

Month	Jan	Feb.	Mar	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov	Dec.	Total
Local cases ...	—	1	3	—	2	—	—	3	—	—	1	3	13
Imported cases	—	—	—	—	—	—	—	—	—	1	—	—	1

AGE AND SEX DISTRIBUTION.

Age	1 to 2		2 to 3		3 to 5		5 to 10		10 to 15		15 to 20		20 & over		Total.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	—	1	1	1	—	—	1	2	4	2	1	—	—	—	7	6
Deaths ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

SMALL POX.

No cases of Small Pox occurred in Gibraltar during the year. No cases were landed from shipping in the bay.

Incidence of Small Pox in Gibraltar, 1888-1926, showing local cases, cases brought in for treatment and cases landed from the Bay.

Year.	Local Cases.	British Subjects residing at La Linea who came in for treatment.	Landed from Bay.	Total.	Deaths (Local cases).	Deaths (Bay cases).
1888	2	1	5	8	—	1
1889	63	—	—	63	6	—
1890	34	2	6	42	3	1
1891	1	—	9	10	—	1
1892	5	—	6	11	1	1
1893	9	—	1	10	1	1
1894	83	2	9	94	8	—
1895	29	—	3	32	—	1
1896	60	1	14	75	3	1
1897	45	—	3	48	2	1
1898	4	—	2	6	—	1
1899	9	1	4	14	1	—
1900	94	—	8	102	5	1
1901	11	—	3	14	—	—
1902	11	—	6	17	—	—
1903	5	—	2	7	—	1
1904	—	—	1	1	—	—
1905	44	—	1	45	4	—
1906	94	—	22	116	14	—
1907	11	1	3	15	—	—
1908	—	—	2	2	—	—
1909	3	—	4	7	—	1
1910	11	3	—	14	3	—
1911	11	—	5	16	2	—
1912	10	3	—	13	4	—
1913	11	—	2	13	1	—
1914	4	—	1	5	1	—
1915	15	6	1	22	1	—
1916	6	1	3	10	—	1
1917	—	—	—	—	—	—
1918	—	—	1	1	—	—
1919	3	—	16	19	—	4
1920	—	—	2	2	—	1
1921	1	—	1	2	—	1
1922	3	—	—	3	—	—
1923	—	—	—	—	—	—
1924	6	14	3	23	—	1
1925	—	—	3	3	—	—
1926	—	—	—	—	—	—
Totals	698	35	152	885	60	20

VACCINATION.

During the year 680 vaccinations were performed, 346 of which were in accordance with the provisions of "The Vaccination Ordinance, 1887," on children who had attained the age of 12 years.

The Public Vaccinator has performed 270 vaccinations and 209 re-vaccinations.

The following statistics show the state of vaccination for births during the year 1926:—

Number of Infants registered in Gibraltar.	Died before vaccination.	Left Gibraltar.	Number requiring to be vaccinated.	Certified as successfully vaccinated.	Certified as insusceptible to vaccination.	Vaccination postponed.	Number remaining.	Vaccination certificates received for children not registered in Gibraltar.
427	17	31	364	334	—	15	30	14

OTHER NOTIFIABLE DISEASES.

The following other notifiable diseases were notified during the year:—

Venereal Diseases...	...	...	...	26 cases.
Rubella	...	...	...	4 „
Dysentery...	...	...	...	9 „
Erysipelas...	...	...	...	25 „
Ophthalmia Neonatorum	...	...	...	1 „
Gastro Enteritis	...	...	...	22 „
Influenzal Pneumonia	...	...	...	6 „
Encephalitis Lethargica	...	...	...	2 „
Chicken Pox	...	...	...	26 „

VENEREAL DISEASE.

Venereal work is done in the City Council's Public Health Laboratories free of charge for residents of Gibraltar and for Gibraltarians resident in the neighbourhood.

Every facility is provided at the Colonial Hospital for both out and in-patient treatment of venereal disease, male and female.

Although venereal disease is included in the list of notifiable infectious diseases, compulsory notification does not apply where a person suffering from this disease is under specific and adequate treatment and is unlikely to spread the disease.

* The number treated in the Male Venereal Ward, Colonial Hospital, was 68 compared with 61 in the preceding year and 83 in 1924. Of these 24 were seamen. No female patient was treated for venereal disease. The number of injections of neo-salvarsan was 618, or nearly double the number in 1925, the increase being due not to the increase in the cases of syphilis but to the greater number of injections given to each patient.

HOSPITAL ACCOMMODATION FOR INFECTIOUS DISEASES.

SEGREGATION BLOCK—Colonial Hospital.

Ground floor—Lower Ward	...	...	...	5 beds.
	Single Room	...	...	2 „
	Single Room	...	...	1 „
	First floor —Upper Ward	...	...	5 „
	Single Room	...	...	2 „
	Single Room	...	...	1 „
Total				16 beds.

* In the Segregation Wards 50 cases were treated compared with 36 in 1925.

ISOLATION HOSPITAL—North Front.

Male Block	...	...	...	No. 1 Ward	...	8 beds.
				No. 2 Ward	...	4 „
Female Block	...	...	...	No. 1 Ward	...	4 „
				No. 2 Ward	...	2 „
Observation Ward	...	...				2 „
Reserve Block	...	...	...	No. 1 Ward	...	6 „
				No. 2 Ward	...	2 „
Naval and Military Block...				No. 1 Ward	...	6 „
				No. 2 Ward	...	2 „
Total						36 beds.

* Annual Medical Report, Colonial Hospital.

The buildings are one-storied. Quarters are provided for nurses and attendants. There is a discharge Block, a laundry and a steam disinfecting apparatus. Electric light is fitted throughout, and drinking and brackish water laid on from the Town mains.

* The Isolation Hospital was open, under the care of Dr. Durante for 214 days for the segregation of two special cases.

LEPROSY.

Three cases of Leprosy have been brought to notice during the year.

1. A man residing at La Linea who claimed to be a British Subject and on attending at the out-patient department of the Colonial Hospital was found to be suffering from Leprosy. He did not remain in Gibraltar for treatment.

2. A Maltese Subject who had been residing in Gibraltar for fifty years was admitted to the Colonial Hospital and was found to be suffering from Leprosy. He was removed to the Isolation Hospital and was subsequently sent to an institution in Malaga.

3. A Gibraltarian, inmate of a Charitable Institution for the past 3 years, was diagnosed at the Colonial Hospital as suffering from Leprosy. He is still undergoing treatment in Hospital.

These cases were all confirmed by bacteriological examination.

Leprosy is rare in Gibraltar and the Colonial Secretary informs me that the following is the only record of the occurrence of the disease available:—

- “In 1909 the Surgeon stated in an official report that he had only met with three cases of Leprosy in 27 years in Gibraltar, two of whom were Spaniards.

The remaining case was peculiar. It occurred in the Lunatic Asylum. The man was admitted to the Asylum as insane in 1883, became affected in 1902, was diagnosed in 1903, and died in 1906. After diagnosis he was kept segregated in the Asylum from the other patients and special precautions were taken.

There is no record of any other case in Gibraltar.”

*Annual Medical Report, Colonial Hospital.

Resumé of Clinical Notes in two cases of Leprosy admitted to the Isolation Hospital by the Surgeon, Isolation Hospital :—

“Of two cases of Leprosy admitted to the Isolation Hospital during the year the first was an aged Maltese, 76 years old. The case was mild, of mixed type, the lesions being limited chiefly to the hands and face and the nodular manifestations predominant. Hansen’s Bacillus was found in great numbers in an excised nodule.

This case was sent to Malaga to undergo treatment at a Leprarium where he died shortly afterwards from Pneumonia.

The second, a man of middle age, an inmate of the Gibraltar Home for Sick and Aged, was sent to the Colonial Hospital for treatment of another condition. The nodules on the face attracted attention and a biopsy revealed the presence of Hansen’s Bacillus in the tissues.

This case was also of mixed type and though mild, was more advanced than the preceding one. Numerous nodules on the face and the marked thickening of the ears rendered the features leonine. The ulnar nerves were thickened and large anæsthetic areas of leucoderma were evident in both upper and lower limbs. There were large trophic sores on both ankles, and the middle phalanx of one big toe had undergone complete absorption rendering it much shorter than its fellow of the opposite side.

He was six months in the Isolation Hospital and was then discharged to the Colonial Hospital where he is still under isolation and treatment. This has consisted of bi-weekly injections of “Moogrol” B. & W. into the gluteal muscles with intervals of rest. Marked febrile reactions have followed the majority of the injections. The results are very promising. The open sores have healed, the ears are practically normal, and the nodules of the face have to a large extent disappeared; the few remaining ones being very much diminished in size.

It has not been possible to trace the source of infection or determine with any certainty the probable time of onset of the disease in either case. The first case had not been out of Gibraltar for many years whilst the second had never been away at all. Both cases were evidently men of uncleanly habits who had lived in unhygienic surroundings.

As the disease is rather a clinical rarity in the town and the likelihood of its spreading very little, it was not considered necessary to continue the heavy expense entailed in maintaining the Isolation Hospital open for the treatment of one single case; isolation in the Colonial Hospital being deemed sufficient.”

There is no special legislation in Gibraltar for dealing with Leprosy and the occurrence of three cases within 12 months brought the danger of the disease specially to notice.

The views now generally accepted are that leprosy is far less infectious than tuberculosis and infectivity can often be removed by modern treatment in six to twelve months. The adoption of harsh measures of isolation are undesirable.

It is possible to treat cases of leprosy in a special ward of a general Hospital under proper nursing and sanitary care without danger to anyone. Non-infective cases can be treated as outpatients at hospitals or dispensaries as is done in India and elsewhere.

PULMONARY TUBERCULOSIS.

NUMBER OF NOTIFICATIONS AND DEATHS.

During the year there were 40 notifications of Pulmonary Tuberculosis, an increase of 12 on the number notified during the previous year.

During the year there have been an average of 6 cases of Pulmonary Tuberculosis in the "Home," where special arrangements are provided for this class of cases, but as a rule only cases in the late stages of the disease avail themselves of the facilities afforded.

The Pulmonary Tuberculosis death rate for Gibraltar is 1·6 per 1,000 living and that for England and Wales was ·771

The incidence of the disease, as compared with previous years, is shown below :—

Year.	Cases notified.	Deaths.	Death rate per 1,000 of Population.	Attack rate per 1,000 of Population.
1891	Not notifiable.	36	1·8	—
1892	do.	40	2·1	—
1893	do.	26	1·36	—
1894	do.	39	2·04	—
1895	do.	34	1·78	—
1896	do.	34	1·78	—
1897	do.	31	1·62	—
1898	do.	32	1·67	—
1899	do.	36	1·8	—
1900	do.	41	2·14	—
1901	do.	32	1·57	—
1902	do.	45	2·21	—
1903	do.	17	0·83	—
1904	do.	23	1·1	—
1905	do.	24	1·14	—
1906	26	22	1·04	1·4
1907	25	14	0·66	1·4
1908	32	26	1·42	2·05
1909	43	25	1·36	2·7
1910	53	27	1·48	3·4
1911	127	32	1·67	7·4
1912	99	27	1·41	5·8
1913	63	33	1·78	3·9
1914	43	36	1·99	2·6
1915	38	29	1·61	2·3
1916	28	29	1·56	1·6
1917	29	31	1·67	1·7
1918	30	37	2·05	2·4
1919	32	39	2·19	1·9
1920	31	32	1·80	1·9
1921	34	30	1·61	2·0
1922	29	26	1·50	1·7
1923	48	22	1·26	2·9
1924	27	26	1·5	1·6
1925	28	30	1·7	1·7
1926	40	28	1·6	2·4

The total number of deaths from Pulmonary Tuberculosis was twenty-eight as compared with thirty for the previous year.

SEASONAL PREVALENCY OF PULMONARY TUBERCULOSIS
IN GIBRALTAR DURING 1926.

Month	Jan.	Feb.	Mar	Apl.	May	June	July	Aug	Sept.	Oct	Nov.	Dec.	Total
Local Cases	3	4	2	5	2	5	5	2	3	1	1	7	40
Imported Cases ...	—	—	—	—	—	—	1	1	—	1	—	—	3

AGE AND SEX DISTRIBUTION.

Age	Under 15		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 to 44		45 to 49		50 to 55		56 & over		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Cases	1	—	1	4	2	4	3	—	3	2	3	2	3	2	4	—	2	—	4	—	26 14
Deaths	—	—	1	3	3	—	3	2	5	—	—	1	1	—	1	—	5	—	2	1	21 7

BACTERIOLOGICAL WORK.

The number of specimens of sputum examined for Tubercle bacilli during the year has been two hundred and five of which fifty-nine were positive and one hundred and forty-six were negative.

REPORT OF THE DESTITUTE SICK AND TUBERCULOSIS
SCHEME FOR 1926.

STATE OF EMPLOYMENT.

There was some degree of unemployment during the year and a large number of persons who, although not wholly unemployed, were working intermittently, many of them on short time (Coaling, Dockyard, Royal Engineers, &c.)

There is no Poor Law in Gibraltar and the existing Official and Voluntary Charitable Organisations do not relieve able bodied unemployed.

In July schemes were considered by the Government and by the City Council whereby work would be available for unskilled labour (Relief Work) should more than casual unemployment become prevalent, and men genuinely unable to obtain work. In December, Relief Works were sanctioned and about 120 men were taken on.

AMOUNT OF RELIEF.

A large amount of charitable work in Gibraltar is voluntary, approximately £10,000 a year is collected, distributed and administered without any charge to the public by about a dozen organisations each having its honorary secretary and voluntary workers.

This method of administering public assistance through local charitable organisations having suitable men and women prepared to devote a large amount of time to the poor, studying each case, &c., has worked very well in Gibraltar.

The Destitute Sick and Tuberculosis Scheme is administered by the Council, the arrangements for its administration were given in the Annual Report of 1924, the essential features being the study of each case individually.

The expenditure for the past year has been £3,718-4-6 as compared with £4,849-2-10 for the previous year.

THE GIBRALTAR HOME FOR SICK AND DESTITUTE.

INDOOR RELIEF.

The average number of inmates during the year was 57. The average number of persons suffering from Tuberculosis in the "Home" during the year was 6.

A portion of the upper floor of house No. 57 is set apart for cases of Tuberculosis, and a special scale of diet is provided for the inmates.

During the year many improvements have been introduced which have added greatly to the comfort of the inmates, the principal being the acquisition of a portion of the Rock on the East side which has been fenced in and converted into a garden. This has greatly increased the amenities of the "Home" and is much appreciated.

FEEDING.

The cost of feeding per head per day has averaged during the year $10\frac{3}{4}d.$, as compared with $1s. 0\frac{3}{4}d.$ for the previous year.

Although the greatest economy is exercised in the feeding of the inmates, rations are frequently inspected and the dietary enquired into and it can be said that the inmates are well and economically fed.

CLOTHING.

Approximately £100 has been spent during the year on clothing for the inmates. The "Home" is now well equipped and this has increased the comfort of the inmates.

OUTDOOR RELIEF.

The number of persons in receipt of outdoor relief during the year under review is as follows:—

<i>Month.</i>					<i>No. of Persons.</i>
January	...	...	...	...	68
February	...	...	...	...	70
March	...	...	...	...	68
April	...	...	...	...	65
May	...	...	...	...	64
June	...	...	...	...	67
July	...	...	...	...	68
August	...	...	...	...	69
September	...	...	...	...	69
October	...	...	...	...	70
November	...	...	...	...	68
December	...	...	...	...	69

The total amount of relief given during the year was :

Meat	...	...	...	...	6,812 lbs.
Milk (Condensed)	...	...	...	...	4,080 tins,
Milk (Fresh)	...	...	...	...	1,082 pints,

in addition to small money grants to families.

The total cost of outdoor relief during the year has been £694-9-6.

DESTITUTE SICK AND TUBERCULOSIS SCHEME.

SUMMARY OF INDOOR AND OUTDOOR EXPENDITURE FOR THE YEAR 1926.

I n d o o r R e l i e f .

	£	s.	d.	£	s.	d.
Provisions	932	1	9			
Miscellaneous	414	19	10			
Maintenance of Buildings	294	0	5			
Rent	373	4	0			
Light	18	16	1			
Water... ..	68	19	10			
Funeral Expenses	6	11	0			
Printing and Advertisement	4	1	0			
Insurance	1	0	0			
Clothing	99	19	11			
Drapery Sundries	5	5	3			
Hire of Telephone	9	5	0			
Fire Extinguishers	25	2	6			
Construction of Fence, &c	139	8	5			
				2392	15	0

Days of Subsistence	20,963
Average number of Inmates... ..	57
Cost of feeding per head per day... ..	10 $\frac{3}{4}$ d.
" " " " year	£16 7 0 $\frac{1}{2}$
Total all-in cost per head per day	2s. 3 $\frac{1}{2}$ d.
" " " " year	£41 19 8 $\frac{3}{4}$
Calories per head per day	2,599

O u t d o o r R e l i e f .

Meat 6,812 lbs.... ..	197	11	1			
Milk (Fresh) 1,082 pints... ..	14	5	11			
Milk (Condensed) 4,080 tins	144	10	0			
Grants to Families	333	16	0			
Funeral Expenses	3	6	6			
Printing	1	0	0			
				694	9	6
*Salaries				611	0	0
Carried to Suspense A/c... ..				20	0	0
Total Expenditure on Indoor and Outdoor Relief for 1926				3718	4	6

*Includes portion of salary of S. Inspector employed part time on this work.

SERA, VACCINES, &c., KEPT IN STOCK.

Anti-Meningococcus Serum.
 Anti-Streptococcus Serum.
 Anti-Anthrax Serum.
 Anti-Dysentery Serum.
 Anti-Plague Serum.
 Plague Prophylactic.
 Cholera Vaccine.
 Diphtheria Antitoxin.
 Tetanus Antitoxin.
 Tuberculin.
 Insulin.
 Calf Lymph.
 Influenza Vaccine.
 Diphtheria Prophylactic.
 Scarlet Fever Streptococcus Antitoxin.

INVESTIGATION AND PREVENTION OF OTHER DISEASES. MOSQUITOES.

The campaign has been continued on the plan fully described in the Report for 1925, and much progress has been made during the year. The staff employed on this work now have a sound knowledge of the life and habits of the mosquitoes present.

Culex pipiens have been found breeding throughout the year. During the winter months all adults of this species found in houses were females.

Aedes argenteus have not been found breeding in Gibraltar during December, January or February.

From pots in the open it has been observed that the period of development of this mosquito from egg to adult in Gibraltar is 10 days.

Theobaldia longiareolata were found breeding during almost the whole year although during July and August there was a marked diminution in the numbers and none were found during September.

In addition to these species *Anopheles maculipennis*, *Anopheles bifurcatus*, *Anopheles plumbeus* were found in the neighbourhood and *Ochlerotatus detritus* in the salt marshes of the adjacent country.

A more effective control of water tanks has been established. Early in the year a complete inspection of water tanks in the Colony was carried out and defects were immediately remedied. Great care was taken throughout the year that underground tanks were disconnected during the dry weather, and that all tanks were effectively screened.

The number of tanks inspected during the season were :—

Fresh water ..	...	...	450
Brackish water	...	...	260
Total			710

of these 70 were found defective.

Storage tanks for brackish water are gradually diminishing in Gibraltar, owners of houses preferring to have a direct supply from the mains.

DIVIDED CONTROL—Undivided responsibility in anti-mosquito operations is an asset the value of which cannot be lightly ignored.

When different authorities are concerned in a particular locality and where unification of responsibility cannot for various reasons be obtained, representatives of the various parties should be in close touch and thus ensure the closest co-operation of all concerned.

Co-operation has been maintained throughout the year with the Naval, Military and Colonial authorities and has resulted in an increased efficiency of the campaign.

LEGISLATION.—The question of legislation was fully considered by the Colonial Government who decided that, taking into account the peculiar circumstances of Gibraltar and the success hitherto attained by voluntary methods, it was undesirable at present to enact legislation to supersede and take the place of voluntary action.

Sir Ronald Ross was also of opinion that the mosquito control campaign was progressing very successfully under the powers already granted and he did not recommend additional legislation at present.

RESULTS OF THE CAMPAIGN.—It is of course an impossible task to exterminate all mosquitoes, but with a continuous campaign based on sound lines their numbers may be reduced to an appreciable extent.

Generally mosquitoes are far less prevalent in Gibraltar now than formerly; a card enquiry carried out during the summer shows this clearly. The results were as follows :—

"has much decreased"...	...	...	47
"has decreased"...	...	...	38
"Unaltered"...	...	...	8
"has increased"...	...	...	—
"has much increased"...	...	...	—
Cards not completed	...	...	4
Total answers			97

The cards also showed the great interest taken locally in mosquito control, and much valuable information was obtained by these means.

The campaign received much help and encouragement from Sir Ronald Ross who paid a visit to Gibraltar in November. His memorandum to the Council is included as an Appendix to this Report.

F L I E S .

The flies in Gibraltar are one of the most important of the sanitary problems.

Investigations have shown the fly to be the "carrier" of many diseases. Flies will carry any kind of bacteria they happen to alight on, and contaminate food with them. Most human intestinal bacilli will pass living through the fly's alimentary canal as well as being carried on its feet and mouth parts.

The control of flies is practically impossible unless their breeding places are destroyed. It is impossible to keep food continually covered up or to diminish appreciably the flies by swatting and trapping if they are being continually recruited by the thousand from outside.

Flies in Gibraltar although not really so prevalent as in neighbouring localities, usually are present during the warmer months of the year and appear in great numbers in the autumn.

Every effort is made to deal with their breeding places, the removal of manure is strictly regulated; stables are regularly disinfected; refuse is collected and removed twice daily during the summer months.

There are comparatively few goats in Gibraltar, and their movements in the streets are regulated, goat's dung never remaining in the streets for any appreciable time.

It has been suggested that one source of fly-breeding is the decaying vegetation under the ice plant, *M. cristallinum*, which is very prolific in many parts of the Rock. This has not, however, been proved.

It is probable that large numbers of flies are brought in daily from neighbouring localities where they are very prevalent.

RAT REPRESSION.

Two rat-catchers are permanently employed by the City Council.

Rats are destroyed by trapping and by poisoned baits.

During the year a large amount of attention was directed to the work of rat catching to make this more efficient.

The total number of rats destroyed was as follows:—

Trapped	11,491
Poisoned	974
Total... ..	<u>12,465</u>

As according to the Board of Agriculture only 25 per cent. of those actually killed by poison are found on the surface, the number of rats destroyed during the year is approximately 15,387, which is considered a very satisfactory result.

The largest numbers were obtained during the months of June, July, August and September.

Rats Destroyed during 1926, by Districts (not including H.M. Dockyard).

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
South District	270	291	306	262	79	296	377	408	322	237	229	255	3,332
Town „	202	197	210	216	462	651	660	570	497	340	238	200	4,443
North „	128	93	125	63	118	310	242	316	231	161	58	36	1,881
Sheds and Warehouses Waterport Wharf and Commercial Mole	13	19	28	5	18	8	125	28	39	24	6	11	324
Total.....	613	600	669	546	677	1265	1404	1322	1089	762	531	502	9,980

Rats examined during 1926.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
Infected	—	—	—	—	—	—	—	—	—	—	—	—	—
Uninfected	7	7	15	5	11	11	6	18	10	12	6	10	118

Number of poisoned baits laid by Rat Catchers during 1926.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
7,089	6,643	8,780	5,999	5,535	6,814	8,989	9,178	8,880	8,542	7,417	7,999	91,865

Rats Destroyed during 1926.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
Civil and Colonial Property } Trapped ...	574	548	620	511	658	1192	1328	1256	1007	704	525	500	9,423
} Poisoned...	39	52	49	35	19	73	76	66	82	58	6	2	557
H.M. Dockyard } Trapped ...													2,068
} Poisoned...													417
Total.....	613	600	669	546	677	1265	1404	1322	1089	762	531	502	12,465

An interesting experiment in Rat Prevention is mentioned by the Medical Officer of Health of the Port of London in his Annual Report for the year 1926:—

AN EXPERIMENT IN RAT PREVENTION.

“An experiment of some interest resulted in illustrating one of the methods by which ratty premises may be dealt with.

A large store in a warehouse had material which, owing to infrequent turnover, afforded not only ample and apparently delectable food-stuff for rats, but also convenient warm and dry nesting.

The damage done attracted the notice of your Inspector in the district and a close examination was made of the means of ingress for the rats, as also the conditions under which they lived, in relation to the question of extermination.

An examination of the warehouse showed that there were two rat populations to be dealt with—one having acrobatic ingress, of which the marks were very evident, the approach being by way of greasy machinery; while the other seemed to have taken up permanent and satisfactory quarters.

The proofing out of casual or regular marauders was found to be a very simple proposition—that of covering gnawed and gnawable woodwork with zinc sheeting. This, however, enclosed a large population. The rats inside could only be approached satisfactorily through one of the three necessities for a rat—food, water and undisturbed nesting. The nesting could not be interfered with, while ample food was found in the material amongst which nesting took place.

Water, it was found, could only be obtained through occasional drips from the roof or from fire-buckets or by means of holes of approach to the roof guttering, or lastly, from the drips from hydraulic cranes. It was, therefore, determined to entirely cut off the rat from his water.

The proofing of the hydraulic cranes by means of wire-netting of proper mesh was part of the procedure for preventing ingress. This also kept the rats from the drips from these cranes. Drips from the roof were few and far between, but as the experiment proceeded it was interesting to note that the floor in the way of one drip was scoured clean by the tongues of the rats, as an indication of success.

Poison added to the water of the fire-buckets was partaken of by a few of the rats. Now that holes to the roof were sealed, it was found that, while in time past trapping in the presence of ample and suitable food and water was unsuccessful, cabbage, which of course presented a certain amount of water, formed an acceptable bait, and trapping was successful; in the result a place formerly inordinately ratty, is to all intents and purposes rat-free at the present moment.

One is often asked to suggest means for ridding a place of rats. The method successful in this case is seen to depend entirely on a close consideration of the whole circumstances; such consideration has to be made for each ratty premises dealt with.

The important point about the experiment here described is not so much the killing of the rats, as the permanent lowering of the state of rattiness in the prevention of breeding, through the simple process of depriving the breeders of water."

That rats do great damage to property and materials of all kinds is a fact well known to the public, but it is as a "carrier" of disease that it is of such importance to Gibraltar.

Rats are regularly examined for any evidence of plague.

Plague which is endemic in Morocco is primarily a disease in rats, and is conveyed from rat to man mainly by the rat flea. Plague once established is most difficult to eradicate and leads to the imposition of trade restrictions.

The possibility of the introduction of plague is always present and consequently we cannot afford to relax measures devised for its prompt detection and suppression.

The question of rats and plague has been dealt with recently in the Annual Report of the Medical Officer of Health, Port of Liverpool, and the subject is regarded as of such importance to Gibraltar that an extract from the article is included.

Rats and Plague.—Liverpool trades extensively with many foreign ports where plague is always prevalent. All vessels arriving from such ports are boarded, the crews and passengers examined and careful enquiry made as to any evidence of the existence of plague amongst the rats on board. But medical inspection alone is not sufficient, for rodent plague may exist on board without having given rise to any

human cases and without any sick or dead rats having been seen. Consequently, after the ship berths it is necessary :—

- (1) to catch samples of the rat population in all parts of the ship ;
- (2) to examine the ship in all parts, and at various times during the discharge of cargo, for sick or dead rats.

All rats so obtained are examined for signs of plague by the City Bacteriologist. Both proceedings are necessary, for in the past each has resulted in the discovery of plague independently of the other.

Similarly along the dock quays and in the sheds and warehouses it is necessary to search and trap, for the success of plague-preventive measures depends on the detection of the infection at the earliest possible moment, followed by the adoption of energetic measures to destroy every infected rat. There is little risk of an extensive outbreak of human plague in this country, but rodent plague, once established, is most difficult to eradicate, and, in addition to causing possibly a few human cases, it leads to the imposition of restrictions on our ships in foreign ports where there is greater danger of a serious epidemic of human plague following the importation of infected rats. Active measures against rat-plague are therefore well worth the trouble and expense involved, not only on public health grounds, but in the interests of trade and commerce as well.

Method of estimating Rat infestation.—Rat searchers and rat catchers report on the degree of rat infestation on every vessel they visit, and by noting such evidence of rats as the quantity of excreta and whether it is fresh or stale, the presence of runs and holes, the gnawing of woodwork, damage to cargo, &c.—they are able to judge the degree to which a ship is infested. If the evidence points to the presence of many rats on board, a sanitary inspector visits the ship, and if he confirms the reports of the rat staff, the owners of the vessel are requested to have the ship fumigated.

Whenever an inspector, rat catcher or rat searcher reports that rats gain access to stores or living rooms from the holes or bunkers, or *vice-versa*, a senior inspector visits the vessel to ascertain the nature of the rat-proofing to be adopted to prevent the rats travelling and to order the work necessary for this purpose. So far, there has been no difficulty in getting work of this character carried out.

On the quays and in the various sheds and offices, the rat catcher looks for evidence of rats in the same manner as the ship rat catcher, but not content with this, he baits his traps and leaves them open for a night or so, or puts down a quantity of baits and judges by the number of these taken whether

there are many rats or not. If the result indicates the presence of rats, traps are set, but if the result is negative, the rat catcher passes on to the next dock or shed.

The possibility of importation of plague is ever present, consequently we cannot afford to relax measures devised for its prompt detection and suppression.

Rat-repressive Measures.—While the Port Sanitary Authority accept responsibility for all plague-preventive measures, it is the duty of all ship-owners and other occupiers of premises on the dock estate to take steps to keep down the rat population, both on shore and in ships in the Port. But the Port Sanitary Authority also are interested in the reduction of the numbers of rats on shore, because if at any time rodent plague were introduced it would spread very rapidly amongst a dense rat population. With this object in view the Authority have devoted constant attention to the question of rat-proofing on the docks, with excellent results. In this work the shore staffs of the shipping companies, and, indeed, the occupiers of all types of premises have given every assistance and now thoroughly appreciate the objects in view and the value of the measures they are asked to adopt.

Rat-proofing may be divided into two sections, viz., structural rat-proofing and administrative measures.

For the most part the buildings on the dock estate are as nearly structurally rat-proof as it is possible to make them. One small area in the oldest part of the docks and only used for barges and canal boats is unsatisfactory in this respect, but nothing short of complete reconstruction could make it rat-proof. To this area the Port Sanitary Authority gives unremitting attention, and efforts are made to compensate for structural defects by special attention to administrative measures.

Refreshment rooms in the docks have in the past given a good deal of trouble, but these are now maintained in a satisfactory condition.

Administrative Measures.—Even if buildings are structurally rat-proof rats, will get in amongst cargo, through open doors or beneath sliding doors. It is therefore necessary to see that the rats which do gain access to the buildings are unable to make their homes therein. This depends entirely on the arrangements in the interior. Fortunately the sheds on the docks in Liverpool are transit sheds, inward cargo is removed to all parts of the country as soon as possible and replaced by goods for outwards shipment. There is very little storage actually on the dock estate. Rats cannot, therefore, make their homes amongst the cargo in the sheds because they would be disturbed every day or two. But they might live

beneath wooden offices in the sheds, or in the bo'sun's stores, and in any accumulations of refuse in out-of-the-way corners. To prevent this wooden offices are raised 18in. clear of the ground and the space beneath kept clean, or are cemented or protected by sheet iron all round the bottom so that it is impossible for rats to burrow underneath. Working gear which is in regular use causes no trouble, but such gear as is only required occasionally is either stored on raised platforms or, where possible, hung from the walls. Accumulations of refuse are not permitted, and particular attention is devoted to keeping clean the corners of the sheds and any part which is likely to be overlooked. A senior inspector devotes most of his time to the question of rat-proofing for constant supervision is necessary, but the results obtained are excellent, and it is generally acknowledged that the number of rats on the docks has been reduced to a small fraction of what it used to be.

In Ships.—In addition to catching rats for bacteriological examination and searching for sick or dead rats, the rat-catchers and rat-searchers of the Authority are required to report on the degree of rat-infestation of vessels in the docks. Each man is supplied with an electric torch, and by noting such evidence of rats as the quantity of excreta, and whether it is fresh or stale, runs and holes, gnawing of woodwork, damage to cargo, &c., they are able to judge the degree to which a vessel is rat infested. They report their findings daily in their notebooks, which are read over by the assistant port medical officer and the chief sanitary inspector. If the evidence points to the presence of a considerable number of rats on board, a senior inspector visits the ship, and if he confirms the previous observations the owners of the vessel are requested to fumigate the ship.

In connection with the estimation of the numbers of rats on board a vessel some experiments in the amount of excreta passed by rats feeding on various diets obtainable on ships have been made by two rat catchers of the Port Sanitary Authority, who kept wild rats in cages, fed them, and every day counted the number of droppings. These experiments are being continued, but the results up to the time of writing are given below.

The outstanding feature of the observations is the extraordinary number of droppings which may be passed by a single rat in 24 hours, particularly on a diet of grain offal. Unless this fact is appreciated, estimates of the numbers of rats present may be very wide of the mark, and the number found dead after fumigation may be so much less than the estimate that the efficiency of the fumigation might be doubted.

The great damage that may be done by rats in a short time to a cargo, particularly of maize, was also demonstrated.

ONE RAT OBSERVED FROM APRIL 30TH TO MAY 7TH.

Diet.	No. of Hours.	No. of Droppings.	Remarks.
Mixed feeding, including Cabbage, Potatoes, Cheese, Bacon, and Oatmeal, such as may be found in the general provision stores on board ships.	45 24 24 24 24 20	85 54 42 57 33 68	Larger droppings than usual.
Water ad lib.	45	97	

ONE RAT OBSERVED FROM MAY 3RD TO MAY 9TH.

Diet.	No. of Hours.	No. of Droppings.	Remarks.
Thirds—Water ad lib.	24	139	Very large droppings.
Do. do.	24	164	Very large droppings.
Oatmeal do.	24	57	Ordinary droppings.
Bran do.	19	81	17 of these were from previous feed of Oatmeal.
Sunflower Seed Cake—			
Water ad lib.	48	147	
Do. do.	5	—	None.
Cottonseed Cake do.	24	48	Very small droppings.

ONE RAT OBSERVED FROM MAY 3RD TO MAY 9TH.

Diet.	No. of Hours.	No. of Droppings.	Remarks.
Wheat—Water ad lib.	24	38	
Do. do.	24	73	
Bran do.	24	156	
Oatmeal do.	19	51	
Linseed Cake do.	48	181	
Do. do.	5	9	
Whole Maize do.	24	45	20 of these from Linseed Cake feed.
The white soft part of 425 whole pieces of maize eaten.			

From the foregoing table it will be seen that rats fed on wheat offals, *i.e.*, bran, sharps, thirds, middlings, and grains and seeds pass nearly twice the number of droppings, and these are usually of a larger size than the excreta from a rat having a mixed diet of cabbage, potatoes, cheese, bacon and oatmeal.

The droppings after a diet of grain offals remain fresh for a much longer period than those after a diet of whole grain, oatmeal and oil cakes. The excreta after grain offals is lighter in colour than after other foods.

In vessels carrying bulk maize a very large quantity of nibbled grains are often found, which may lead to the impression that there are a large number of rats present. In this connection it is worthy of note that during the above experiments, one rat on May 9th took out the soft portion of 425 separate grains of maize in 24 hours.

When an officer of the Port Sanitary Authority finds that rats are gaining access to store-rooms or to living quarters he gives advice as to how this may be prevented. Dr. Grubbs, chief quarantine officer of the U.S. America, has recently proposed that extensive measures of rat-proofing should be carried out in ships as an alternative to frequent fumigations. Undoubtedly the rat population of ships could be greatly reduced by cutting off the rats' food supplies, eliminating their nesting places as far as possible and restricting their free movement about the vessels. Further, the efficiency of fumigation when required would be increased, because there would be less chance of rats escaping to parts not under fumigation or to which for some reason the fumigant does not penetrate in lethal concentration. The application of these principles of rat-proofing to existing ships will involve a considerable amount of expense, particularly in large passenger liners, and in the case of some of the older vessels it would be impossible to eliminate all the rat harbourage and runs. Newer ships afford less harbourage, but the possible rat runs, from one compartment to another along pipes, &c., are at least as numerous as in the older ships.

In the future it should be possible to apply the principles of rat-proofing during the construction of vessels without much additional expense, if naval architects and shipbuilders will devote attention to the subject.

But the extent to which vessels become infected with rats does not depend only on their construction, other factors are equally important, *e.g.*, the nature of the cargo carried, the conditions existing at the ports of call, and the duration of the voyage.

Consequently, in the application of rat-repressive measures, ships should not be considered collectively but individually. To take an extreme example, oil tankers should not be subjected to the same measures as regular grain carrying vessels just because both are ships.

It is possible with a staff of trained and reliable men to estimate the condition of the vessel in regard to rats, and on their evidence the measures to be adopted should be decided. Sometimes fumigation would be called for, sometimes some rat-proofing would meet the requirements. The routine fumigation of ships at intervals of six months has not been justified by the number of rats destroyed except in a few cases.

The rat-proofing of ships cannot fail to reduce the number of rats, but it will not avoid the necessity for fumigation in all cases. Further, even if a ship be made structurally rat-proof it is still necessary to attend constantly to the details of administrative rat-proofing by preventing any food, even scraps, being left where rats can get to it, by storing all gear, &c., so that rats cannot nest amongst it and by keeping clear all spaces under or on top of lockers, &c., where rats might make a home. It would seem that, at any rate for some time to come, both fumigation and rat-proofing will be required. But fumigation should not be imposed compulsorily at regular short intervals. It should only be carried out either when there are signs that there is a considerable number of rats on board the vessel or when there is a suspicion that rodent plague may exist on board. Port Health Authorities which have power to demand fumigation should have a staff of reliable men who are trained to estimate degree of rat-infestation of ships and when fumigation is carried out it should be obligatory to expose every rat-infested part of the ship to a lethal concentration of the fumigant for a sufficient period. Further, Port Health Authorities in examining ships as to their condition in regard to rats should be able to make recommendations for rat-proofing and should give the master or the shipowner to understand that if such measures of rat-proofing are carried out in all probability the vessel will be able to go for much longer periods without getting into such a condition as to require fumigation.

The routine fumigation of vessels on arrival from plague-infected ports has never been adopted in this country, though fumigation is carried out immediately any suspicion of the existence of rodent plague on board any ship is aroused. Experience has shown that so far as this country is concerned this policy is justified. Other countries have other views, which can only be judged in the light of knowledge as to local condition. But this may be said with certainty, half-hearted

fumigation as a plague-preventive measure, is worse than no fumigation at all, for it simply spreads over the ship what may have been only a localised infection, and in the past actual cases have occurred of infected rats being driven from the holds into the crew's quarters, resulting in the development of human cases of plague. Further, it may lead to a false sense of security in ports at which an infected ship so treated subsequently touches.

The present need is not so much for frequency as for thoroughness in fumigation, and in obtaining thoroughness and reducing frequency the rat-proofing of ships will be of great assistance.

RAT-GUARDS FOR SHIPS' HAWSERS.*

In view of the world-wide distribution of plague the problem of how to prevent the passage of rats between ships and the shore is of great importance in every seaport. No absolutely efficient and at the same time practicable method has yet been devised. Most countries require rat-guards to be fixed on all mooring-ropes, and certainly rats do use ropes as easily as we use the highways. I have seen rats run down an ordinary 8 in. rope at an angle of 45 degrees with perfect confidence and safety. It is therefore necessary to guard ropes, but it is reasonable to suppose that rats will use the easiest means of travelling from ship to shore or shore to ship. Consequently it is futile to put rat-guards on the mooring-ropes of a ship with low free-board lying close against a quay, for naturally the rats will then go over the ship's side. This may be prevented by breasting the ship off four to six feet from the quay. But breasting off adds very considerable to the cost of loading and unloading cargo because of the longer lift necessary. Indeed, in the case of small ships it may mean a double lift. Such a tax on trade is not justified as a routine procedure. Where there is grave risk of the importation of plague infection, all efficient preventive measures are justified, because the interest of the individual ship must be subordinated to the interest of the public health and of other shipping.

If plague preventive measures are to be applied, not only must the vessel be breasted off from the quay, great care being taken in placing the dummy barges so that rats cannot jump on to them from the bulwarks or through hawse pipe, &c., but also efficient guards must be placed on all mooring-ropes, even wires, and the gangways must be carefully watched or hoisted not only during the night, but at any time

*Reprinted from an article in the *Lancet* of March 28th, 1925 (p. 695), by Charles F. White, M.B., D.P.H., D.T.M., Assistant Medical Officer of Health, Port of Liverpool.

when conditions are quiet enough to tempt the rats aboard. Further, ropes hanging down to fenders or swinging loose may provide a means for rats to go to and from ships. The agility of the rat, particularly the black rat, must be seen to be believed. Lastly, undoubtedly rats go to and from ships in cargo, and when plague is suspected, either thorough fumigation must be carried out before the cargo is discharged, or every package that could conceivably harbour rats must be searched on the quay immediately it is landed.

Effective plague prevention is necessarily an elaborate and expensive proceeding, and cannot be applied as a routine to all ships. Some risk must be taken but it should be reduced to the minimum that is practicable without laying an intolerable burden on trade. In attaining this minimum, rat-guards are undoubtedly valuable, but it is submitted that a general order that all ships should affix them to their ropes is unnecessary and may, in the case of small ships close to the quay, be ridiculous. Rat-guards should be ordered at the discretion of the officers of the Port Sanitary Authority, but when they are ordered, an efficient type, properly applied and maintained in position, should be insisted on, because many ships' officers appear to think that any piece of tin applied to a rope will pass as a rat-guard.

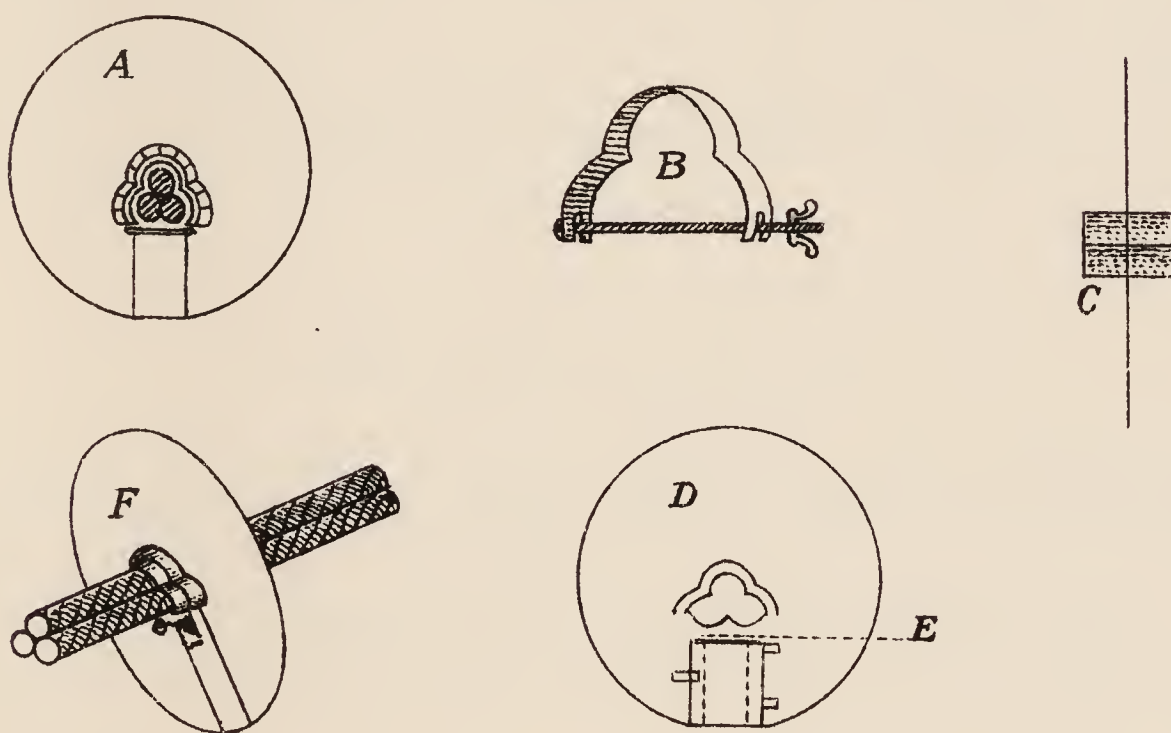
After various experiments, I have no doubt that the plain sheet metal *rimless* disc 3 ft. in diameter, when properly fixed and retained at right angles to the rope, presents an almost insuperable obstacle to rats which they will not tackle at all unless hard pressed. I have seen them gain the edge of the disc when driven, but they have always fallen into the dock in attempting to reach the rope on the opposite side.

Hitherto the 3 ft. metal guard has been made in two half sections pivoted near one edge. In application the two halves are separated and the guard is dropped over the rope, the section thus being closed round the rope and held below by a clip. The central collar is then bound close to the rope. The division of the guard down the centre greatly weakens it, with the result that it will not withstand wind or any rough usage, the parts becoming bent in different directions and eventually separating altogether. They are often kept in use long after they are quite ineffective.

A modification of this type of rat-guard has been invented in Liverpool. The drawings will give a good idea of the essential points in construction. The guard consists of a disc of galvanised sheet iron 1/16 in. thick and 3 ft. in diameter. The edge is left raw—*i.e.*, not wired or turned over. In the lower half is cut a door hinged and so fastened when shut that no foothold is afforded to rats. The door slit leads to the central hole through which the rope passes. Round the

central hole is placed a strong collar projecting about 4 in. on each side, and riveted to the disc. In the collar is a strong steel spring clip which can be tightened by the winged nut on the bolt (Fig. B). In application the door is opened and the guard put over the rope so that the latter passes up into the central hole, where a little force is necessary to overcome the spring of the clip. The guard will now hold quite firmly, but the bolt and screw closing the opening of the clip gives additional security. The door is then closed and fastened, the upper edge having a piece of thick sheet rubber attached so as to close completely the central hole whatever the size of rope in use.

In the drawings a type of guard suitable for three ropes is shown, such being frequently necessary for large ships. Types are also made for two ropes, one rope or two or three wires, and any guard will fit ropes over a range of about 3 in. difference in diameter, so that any ship may easily be supplied with a set of guards suitable to her requirements.



The advantages of this guard are:—

(1) *Ease of application*.—The guard is easily and rapidly applied to one, two or three ropes and needs no binding in position.

(2) *Maintenance of position*.—Under trying conditions of wind and alternate tightening and slackening of ropes the guard has maintained its position perpendicular to the rope for a week's test without any readjustment whatever.

(3) *Rigidity*.—Except for the door opening, the guard is one continuous piece of sheet metal, and is therefore very much stronger than the older type. The rivetting of the collar to

the disc adds greatly to the stability of the guard, while the steel spring resists the bursting strain when two or three ropes alternatively slacken and tighten with the movement of the ship.

The guard costs a few shillings more than the usual pattern, but this should be amply repaid in longer life and much greater efficiency. It is certainly the most satisfactory and practicable rat-guard yet produce.

Samples of these guards have been obtained by the City Council, and may be seen in the Public Health Department.

DISINFECTION.

During the year 151 houses were disinfected on account of the occurrence of infectious disease.

The total number of articles disinfected at the North Front Disinfecting Station was 4,129. This number does not include articles received from shipping in the Bay.

The method in use for the disinfection of rooms is that of Formalin Spray or by vapourising Formalin.

Re-papering, re-painting, lime-washing and soap and water cleansing after disinfection are the methods chiefly relied on.

The disinfection of infected houses or rooms is always done by one particular man in the Public Health Department under the strict supervision of a Sanitary Inspector.

The schools have been disinfected by spraying from time to time.

Stables are regularly disinfected by spraying during the summer months.

The Disinfecting Station is situated near the Refuse Destructor from whence the steam supply is derived.

The machine is a Washington Lyons.

AMBULANCE FACILITIES.

One motor and two horse ambulances are available for (1) non-infectious cases and accident cases, (2) infectious cases and (3) Small Pox cases.

The motor ambulance is also available for public use.

The ambulance service is under the control of the City Council.

The motor ambulance was presented to the Council in 1919 by the American Red Cross. It has an ambulance body on a Ford Chassis. The ambulance has seen a considerable amount of service and is not an ideal vehicle for conveyance of sick and injured, especially severe cases and does not now provide that degree of comfort which is required,

It would be quite satisfactory for the purpose of conveying infected clothing backwards and forwards to the Disinfecting Station and this in my opinion is all it should be used for, much time is wasted at present by the employment of a mule ambulance for this purpose.

It is hoped that it will be possible soon to replace the ambulance by a modern vehicle.

REPORT OF THE CITY ANALYST AND BACTERIOLOGIST.

In all 4,001 samples and specimens were examined.

This number exceeds that of any other year and is an increase of 339 over last year.

The bacteriological and pathological specimens continue to increase in number year by year, and exceed last year's number by 363.

The miscellaneous samples are also more than last year by 18.

The report is divided into three parts as follows:—

Part I. Food and Drugs—Public Health Ordinance.

Part II. Miscellaneous Analyses.

Part III. Bacteriology.

PART I.—FOOD AND DRUGS.

The total number of samples submitted under this heading was 137. These samples were taken officially by Sanitary Inspectors with the necessary formalities.

The following table shows the nature of the samples examined:—

<i>Article.</i>	<i>Number examined.</i>
Cow's Milk	3
Goat's Milk	46
Condensed Milk	2
Cheese	2
Butter and Margarine	8
Edible Fats and Oils	18
Cereals	3
Tea, Coffee, Cocoa	4
Mineral Water	1
Sugar and Saccharine products	5
Spirits and Wine	26
Drugs	13
Miscellaneous	6
	—
	137
	—

The articles classified above were made up as follows:—

Butter and Margarine ... Butter 1, Margarine 7.

Edible Fats Lard 2, Olive Oil 16.

Cereals Baking Powder 1, Maizena 1, Custard Power 1.

Coffee and Cocoa	Coffee 2, Cocoa 2.
Sugar & Saccharine products..	Sugar 1, Jam 1, Marmalade 1, Preserved Oranges 1, Dates 1.
Spirits, &c.... ..	Whisky 1, Brandy 11, Gin 2, Rum 11, Wine 1.
Mineral Waters	Lemonade 1.
Drugs	Tinct of Iodine 2, Sweet spirit of Nitre 1, Spirit of Chloroform 1, Seidlitz powder 1, Tartaric acid 2, Mercury ointment 3, Medicinal Paraffin 1, Epsom salts 1, Ammon. Tinct of Quinine 1.
Miscellaneous	Tinned Fish 1, Chocolate 1, Preserved Peas 1, Sausages 2, Tinned Tomatoes 1.

The number of samples found to be below the standards set out in the Public Health Ordinance was 18 or 13·1 per cent. For comparison the number below the standard was 7·2 per cent. for 1925, and 4·8 per cent. for 1924.

In all cases where the City Council considered it advisable legal proceedings were taken against the vendor. The number of convictions obtained was 9. This includes a case against a milk vendor who prevented a sample being taken by pouring his can of milk down a sink. Total fines amounted to £65-4-0 and costs £8-1-0.

Licences in respect of four milk vendors were cancelled for repeated adulteration.

GOATS' MILK DEFICIENT IN MILK-FAT.

<i>Lab. No.</i>	<i>Fat per cent.</i>	<i>Deficiency in fat per cent.</i>	<i>Remarks.</i>
27	2·75	20·0	Declared skimmed.
32	3·20	8·0	"
1950	3·30	5·7	"
1952	2·80	20·0	"
2104	3·25	7·5	"

The statutory limit is 3·5 per cent. of fat for Goats' milk.

PARTICULARS OF ADULTERATED SAMPLES.

GOATS' MILK CONTAINING ADDED WATER.

<i>Lab. No.</i>	<i>Non-fatty solids per cent.</i>	<i>Amount of added water per cent.</i>	<i>Remarks.</i>
607	6·23	22·0	Fined £3 and costs £1-3-0
1778	4·48	44·0	Fined £6 and costs £1-3-0
2188	6·30	20·0	Fined £10 and costs £1-3-0
2192	4·47	44·0	Fined £6 and costs £1-3-0

The statutory limit is 8·0 per cent. of non-fatty solids for goat's milk.

SPIRITS REDUCED BY ADDITION OF WATER.

<i>Lab. No.</i>	<i>Article.</i>	<i>Underproof.</i>	<i>Remarks.</i>
229	Brandy	43·6	Fined £8-8-0 and costs £1-3-0
298	Rum	46·4	Fined £8-8-0 and costs £1-3-0
327	Rum	37·5	Fined £8-8-0
1101	Rum	28·0	Cautioned. Legal proceedings not instituted.
1102	Brandy	29·0	Cautioned. Legal proceedings not instituted.
1112	Rum	30·8	Fined £10 and costs £1-3-0
1688	Brandy	28·0	Cautioned. Legal proceedings not instituted.

The statutory limit of reduction is 25 degrees underproof for these spirits.

OTHER ARTICLES OF DIET.

<i>Lab. No.</i>	<i>Article.</i>	<i>Adulteration.</i>	<i>Remarks</i>
1561	Olive Oil.	Contained 50% Soya bean oil.	Used in making pastry. No legal proceedings.
1270	Rum	Spanish Red Wine 100 %.	Explanation accepted of error in declaring nature of sample.

GOATS' BOILED MILK.

It will be noticed that there were four samples of Goats' milk deficient in milk-fat. As pointed out last year milk vendors when ask for a sample by inspectors habitually declare the milk to be skimmed.

It is the practice of some vendors of goats' boiled milk to take off the scum which rises after boiling. A large proportion of this scum is fat, and the scumming is done to improve the appearance of the vended article.

This process of scumming robs the milk of a valuable constituent.

UNBOILED MILK.

During the year under review a question has arisen in respect of vended goats' imported milk. It is essential and made compulsory by law that all imported goats' milk shall be boiled before being sold to the public. The reason for this is apparent when it is realised that Undulant Fever occurs among the goats in Spain. In previous years no sample of goats' milk that had not been boiled was offered for sale in Gibraltar.

This year on two separate occasions a sample of imported milk was found to contain some unboiled milk (approximate 10 per cent.) In my opinion this is a serious matter, for a little contaminated milk added to the bulk of sterilised milk would contaminate the whole.

Therefore a careful examination is made for the presence of unboiled milk in all samples submitted for analysis.

It is fortunate that the laboratory tests for unboiled milk are delicate and without fallacy and it can be stated that the presence of as little as 2·5 per cent of unboiled milk in a sample of boiled milk can be detected with certainty.

AVERAGE COMPOSITION OF MILKS.

'The average composition of Goats' milk was :—

Fat	...	...	...	...	4·12
Non-fatty solids	...	...	...	...	8·57

The average composition of Cows' milk was :—

Fat	...	...	...	...	4·78
Non-fatty solids	...	...	...	...	9·08

These figures are well above the statutory limits for Gibraltar.

No preservative or colouring matter was found in any sample of milk examined.

DRUGS.

Of the thirteen samples of drugs received all were found to be genuine.

OLIVE OIL.

Many samples of olive oil examined during the year were found to be of inferior quality.

Analyses of samples taken under the Public Health Ordinance disclose the fact that they were of varying acidity—some reaching high proportions. Instances have occurred this year where 7%, 8%, 16% and 19% of acidity calculated as oleic acid have been found to be present.

There is at present no legislation in Gibraltar on this subject but in Malta there is an Ordinance controlling the sale of this oil which reads as follows :—

“No one shall sell, expose for sale, keep for sale, or distribute to persons depending on him for alimentary purposes animal or vegetable fats or oils deteriorated through rancidness, &c., &c., or containing oleic acid in excess.”

The following are the results of analyses as regards acidity of samples of olive oil which have been submitted during the year:—

No.					Acidity (as oleic acid) per cent.
78	..	...	...	...	5.48
79	...	...	...	...	5.38
80	...	...	...	...	5.48
81	...	...	...	...	8.63
82	...	...	...	...	5.25
83	...	...	...	...	5.10
84	...	...	...	...	2.24
85	...	...	...	...	19.30
86	...	...	...	...	5.61
87	...	...	...	...	5.36
88	...	...	...	...	16.54
89	...	...	...	...	8.19
90	...	...	...	...	6.66
91	...	...	...	...	7.52
57	...	...	...	...	19.96

The question of the advisability of introducing legislation on the subject is now under consideration.

PART II.—MISCELLANEOUS ANALYSES.

In all 157 samples under this heading were examined. These were as follows:—

- 10 samples of coal for analysis and calorific power from City Electrical Engineer.
- 2 samples of coal for chemical analysis and calorific power—private samples.
- 1 sample of Dutch cheese for chemical analysis.
- 1 drug—suspected opium
- 22 samples of wheat flour, chemical analysis, from Military Authorities.
- 10 samples of wheat flour, chemical analysis—private firms.
- 9 samples of spirits for presence of saccharine.
- 3 samples of condensed milk—chemical analysis—private
- 10 samples of cows' milk—chemical analysis—private.
- 1 sample of cows' milk—chemical and bacteriological analysis, supplied to Military Hospital
- 2 samples of cows' milk—chemical analysis—Military Authorities.
- 3 samples of goats' milk—chemical analysis—private.
- 48 samples of water—bacteriological—from Superintendent Civil Engineer—H.M. Dockyard.
- 1 sample of water—for hardness—private.
- 4 samples of water—chemical analysis (2) and bacteriological (4)—City Engineer.

- 1 sample of lime juice—to report if suitable for dietetic purposes.
- 1 sample of medicinal preparation—private.
- 1 sample of medicinal paraffin for purity, from M.O.H.
- 1 sample of heroine—chemical analysis for adulteration—private.
- 2 samples of tinned fish—bacteriological examination for cause of decomposition.
- 2 samples of sugar—chemical analysis to ascertain cause of damage.
- 1 sample of sugar—for purity—private.
- 2 shirts, 1 trousers and 1 boot—from Police Surgeon—examination of stains.
- 2 samples of olive oil for edible purposes.
- 1 sample of oil—identification and suitability for dietetic purposes.
- 5 samples of alcohol for analysis.
- 1 sample of soya bean oil for adulteration and report.
- 1 sample of sheets of packing paper to ascertain cause of damage.
- 3 samples of First field dressings—bacteriological examination for sterility—Military Authorities.
- 1 sample of poultry—bacteriological investigation.

TOXICOLOGICAL EXAMINATIONS.

- (1) Articles of clothing sent by Police Surgeon for examination of Seminal stains—none found.
- (2) Sample of “pure medicinal paraffin” suspected of causing sickness in infant—The article contained small quantities of menthol, thymol, eucalytol and camphor, and was probably “Parafinum Composition Liquid,” used for external use.
- (3) Drug—suspected opium.—Morphine was not detected.
- (4) One poultry for suspected poisoning—none found.

CONDENSED MILKS.

The law in England controlling the sale of condensed milks has been placed on a definite basis regarding the composition of these articles. The regulations now require that all such milks shall conform to the following:—

	<i>Milk-fat per cent.</i>	<i>All milk solids per cent.</i>
1 Full cream sweetened... ..	9·0	31·0
2 Full cream unsweetened	9·0	31
3 Skimmed unsweetened	—	20·0
4 Skimmed sweetened	—	26·0

An Ordinance for Gibraltar based on the above is in course of preparation.

Four samples of condensed milks were examined. The figures obtained by analysis are given below:—

	Cane Sugar.	Lactose.	Milk fat.	Protein.	Ash.	All milk-solids.
Sweetened Condensed	43.98	11.85	7.95	9.02	1.82	30.62
Sweetened Condensed	47.00	10.56	7.30	8.57	1.69	28.12
Unsweetened Condensed	—	10.33	8.50	8.20	1.52	28.55
Skimmed Sweetened	49.96	14.75	0.45	10.83	1.66	27.74

If these be compared with the standards required in England it is seen that only the skimmed sweetened variety conformed—the others being either somewhat deficient in fat, or all total solids, or both.

No. 5 WELL, NORTH FRONT.

Date	Parts per 100,000.				B. Coli
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
9/ 4/26	—	5.2	—	—	not found in 25 c.c.
12/ 5/26	—	6.1	—	—	present in 5 c.c.
18/ 6/26	61.0	6.0	18.0	11.0	present in 2 c.c.
26/ 7/26	51.0	5.9	19.0	10.0	not found in 25 c.c.
28/ 8/26	—	9.3	—	—	not found in 25 c.c.
28/ 9/26	79.0	18.2	22.0	11.0	present in 25 c.c.
29/10/26	—	7.0	—	—	present in 25 c.c.
30/11/26	66.0	13.0	22.0	—	not found in 25 c.c.

This water has been under observation for some time and casual analyses in past years showed that the supply was free from pollution.

Laboratory examinations were conducted at intervals during 1926 with the object of detecting possible contamination at any particular period.

The findings are tabulated above and it will be noticed that the water is subject at times to pollution (probably by sea water), as the well is very near the sea. In emergency the water would be fit for drinking if suitably chlorinated.

PART III.—BACTERIOLOGICAL AND PUBLIC HEALTH WORK.

3,618 samples and specimens were examined during the year 1926 on behalf of the City Council, Military Authorities, Naval Authorities, Colonial Hospital and the General Practitioners of Gibraltar.

These are tabulated below:—

	<i>Number of Specimens.</i>
Drinking water and others	235
Swabs for B. Diphtheriæ, Vincent's Organisms	666
Sputum for Tubercle Bacillus, &c.	205
Blood for Enteric Fever and Undulant Fever (Widal)	199
Blood counts—complete	43
Blood for Malaria parasites; Relapsing Fever	20
Blood cultures	27
Blood sugar estimations	54
Blood urea estimations (including urea conc. factor)	43
Blood for Venereal disease (Wassermann) ...	331
Cerebro-spinal-fluid, Cytology, Globulin, Sugar, Organisms (Wassermann)	24
Urine, urea content (including urea concentra- tion test)	54
Pus for Gonococci and other organisms	69
Urine, analysis, B. Coli, B. Typhosus, &c. ...	841
Fæces for Typhoid, Dysentery, &c.... ...	107
Human Milk (analysis)	28
Serum for T. Pallidum (Dark ground)	5
Goats' blood for Undulant Fever (Widal) ..	219
Rats for Plague	118
Histological (cutting, staining, mounting) ...	9
Gastric contents	296
Pleural Fluids (Cytology, Organisms)	11
Miscellaneous	14
	<hr/> 3,618 <hr/>

The miscellaneous specimens consisted of Fæces for Occult blood, intestinal ova and tubercle B; Tape worms; Bile for organisms; Urines for Quinine; calculus, ringworm hair.

Forty-two Autogenous vaccines were made and dispensed in ampoules in series of increasing doses.

Twenty-nine Stock vaccines were diluted and dispensed in ampoules in series of increasing doses.

Fourteen guineapigs were inoculated to determine virulence of organisms—chiefly *B. Diphtheriæ*.

Four fowls were inoculated to determine virulence of organisms.

Four hundred and seventy-four gallons of distilled water were made and sold.

Forty-four antityphoid inoculations were done in Laboratory.

One Winchester quart of sterile glucose saline was prepared for a doctor.

BLOOD SUGAR DETERMINATIONS.

During the year fifty-four estimations of sugar in blood were done. These were in connection with the diagnosis of diabetes and the control of Insulin treatment, Maclean's method was used.

RENAL EFFICIENCY TESTS.

In connection with renal disease, the estimation of blood urea is being more relied upon by the doctors. The urea concentration factor was obtained for 38 patients, an increase of 24 over last year. Maclean's modification of Marshall and Van Slykes soya bean method was used.

The urea concentration test was carried out on 10 patients. The sodium hypobromite method with Dupre's ureometer was used.

NOTIFIABLE DISEASES—SPECIMENS EXAMINED.

The table given below shows the number and nature of specimens examined and the results obtained, in connection with notifiable diseases:—

	Total.	Positive.	Negative.
Blood for V.D. (Wassermann)	331	113	218
Cerebro-Spinal Fluid (Wassermann)	24	5	19
Pus for Gonococci	69	20	49
Serum for Tr. Pallidum	5	2	3
Sputum for Tubercle B.	205	59	146
Swabs for B. Diphtheriæ	686	137	529
Blood culture for Enteric Fever	27	1	26
Blood for Malaria	20	5	15
Blood for Relapsing Fever	1	0	1
Nodule (Leprosy)	2	2	0
Widal reaction :—			
B. Typhosus	199	23	156
B. Paratyphosus A		2	
B. Paratyphosus B		17	
Mic. Melitensis		1	
Fæces :—			
B. Typhosus	107	2	95
B. Paratyphosus B.		1	
B. Dysenteriæ Flexner		6	
B. Dysenteriæ Shiga		1	
Morgan's Bacillus		1	
Amœba Histolytica		1	

Swabs for B. Diphtheriæ include convalescents and contacts.

Fæces for B. Typhosus include convalescents.

CEREBRO-SPINAL FLUIDS.

Cytology, Globulin test, and bacteriological examinations were systematically carried out on all specimens received, and when especially indicated, estimations of Sugar, Sodium Chloride, urea and the Wassermann reaction were undertaken.

Of the 24 specimens examined 13 were found to be normal, and 5 gave the Wassermann test for Sy. Meningitis.

The laboratory findings of the remainder are tabulated below :—

Lab. No.	1	2	3	4	5	6
White cells per cmm.	101	8	7,621	6	26	1,500
Nature of cells.	Small Lymphs.	Small Lymphs.	Poly- morphs	Lymphs.	Lymphs.	Poly- morphs.
Globulin.	Excess.	Excess.	Large excess.	Excess.	Excess.	Large Excess.
Sugar Mgrms. per 100 c.c.	—	—	—	0·057	—	None.
Sod. Chloride Mgrms. per 100 c.c.	—	710	—	760	—	—
Urea Mgrms. per 100 c.c.	—	486	—	—	—	—
Laboratory findings.	Tubercle Bacilli present.	Ureamia.	Organisms not found.	Probably Cerebral Tumour.	T.B. not found.	Menin- gococci present.

PLEURAL FLUIDS.

Cytology and Bacteriological examinations were conducted on each specimen.

Of the eleven specimens received the following are the Laboratory findings:—

	<i>Organisms found.</i>	<i>Nature of cells.</i>
1. In two specimens.	Streptococci only.	Many Polymorphs.
2. In one specimen.	None.	Chiefly Mesothelial cells (suggesting cancer).
3. In one specimen.	B. Pyocyaneous only.	Lymphocytes (few).
4. In one specimen.	Pfeiffer's influenza B. only.	Chiefly Polymorphs.
5. In one specimen.	Staphylococci only.	Polymorphs.
6. In one specimen.	Tubercle Bacillus.	Many small Lymphs.
7. In four specimens.	None.	Many small Lymphs (indicates T.B. lesions).

It is not common to find Tubercle B. in Pleural fluids. The absence of organisms and the presence of small Lymphocytes strongly points to tubercular lesion.

APICAL INFECTION OF TEETH.

Swabs for teeth cavities and teeth roots taken immediately after extraction were examined bacteriologically in respect of thirteen patients.

Streptococci (viridans) were found in ten of these, mixed organisms in one, and no organisms in two. Autogenous vaccines were prepared for five patients.

GASTRIC DISORDERS—FRACTIONAL TEST MEAL.

The analyses of gastric contents in the Laboratory diagnosis of juxta-pyloric ulcer, Obstruction, Carcinoma, Achlorhydria, hypersecretion, retention and examination of pyloric function were undertaken for thirty-one patients—representing 286 specimens of stomach contents. The Laboratory examination entailed the estimation of free hydrochloric acid, and total acidity and the detection of blood, pus, mucus, bile, and starch in each specimen before, and every fifteen minutes after the taking of the test meal.

In each case a curve was plotted showing the percentages of free hydrochloric acid and total acids in relation to fifteen minutes intervals until the stomach had emptied.

These Laboratory investigations (Rehfuss) were undertaken for the first time in Gibraltar.

GOATS.

The serological agglutination test was carried out on the 205 goats living on the Rock. All were found free from Undulant Fever.

RATS.

One hundred and sixteen rats which were caught in Gibraltar or on the quays were examined for the bacillus of Plague. All were free.

VINCENT'S ANGINA.

The organisms of Vincent's angina were found in the direct smear examination of seven swabs.

ANIMAL INOCULATIONS.—VIRULENCE OF *B. DIPHTHERIÆ*.

Fourteen Guineapigs were inoculated from "carrier" and contact cases of *Diphtheriæ*. Seven of these proved to be fully virulent and seven non-virulent.

B. WELCHII.

A sporing bacillus isolated from 10 c.c. of cow's milk resembling *B. Welchii* had no effect on a Guineapig.

TUBERCLE *B.*

The centrifuged sediment of a specimen of urine was inoculated subcutaneously into a Guineapig. The pig remained unaffected.

ROUP IN POULTRY.

Four different organisms (1) *B. Pyocyaneus*, (2) *B. Diphtheriæ Columbarium*, (3) a gram-negative coccus (large), (4) a gram-negative coccus (small), were isolated in pure culture from throat, cleft, and pharynx of a fowl. Each was planted in the throat of healthy fowls. The experimental birds did not contract the disease.

DRINKING WATERS AND OTHERS.

These include samples taken from Moorish Castle and Willis's Road, 56; Governor's Parade, 11; Brackish Water, 11; Sea Water, 11; Underground Tanks and Wells, 153; North Front Wells, 9; Watering Jetty, 11; Catalan Bay Wells, 24; Miscellaneous, 2.

A. GEO. HOLBOROW, F.I.C.,
City Analyst and Bacteriologist.

MONTHLY ANALYSES OF GIBRALTAR DRINKING WATER
DURING 1926

Date.	Parts per 100,000.				B. Coli.
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
30/ 1/26	10.0	2.4	4.0	Nil	Present in 25 c.c.
19/ 2/26	11.0	2.6	3.5	Nil	do.
30/ 3/26	11.0	2.8	3.0	Nil	do.
28/ 4/26	10.0	2.9	4.0	Nil	Not found in 25 c.c.
18/ 6/26	10.0	2.8	4.0	Nil	Present in 10 c.c.
26/ 7/26	10.0	2.8	4.5	Nil	Not found in 25 c.c.
28/ 8/26	—	3.5	—	—	do.
28/ 9/26	14.5	3.2	5.0	Nil	do.
29/10/26	12.0	2.0	4.3	Nil	*Present in 1 c.c.
30/11/26	—	5.2	—	—	*Present in 2 c.c.
28/12/26	15.0	4.8	3.0	Nil	Not found in 25 c.c.
Average	11.5	3.1	3.9	—	—

*Local pollution.

RESULT OF MONTHLY ANALYSES OF BRACKISH WATER SUPPLY IN 1926.

SAMPLES OBTAINED FROM MAIN IN GOVERNOR'S STREET.

Date	Parts per 100,000.				B. Coli
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
30/ 1/26	1,095.0	550.0	21.0	168.0	present in 1 c.c.
19/ 2/26	1,000.0	510.0	20.5	152.0	„ 1 c.c.
30/ 3/26	1,166.0	550.0	21.0	120.0	„ 0.1 c.c.
28/ 4/26	1,320.0	580.0	21.5	184.0	„ 1 c.c.
18/ 6/26	1,395.0	640.0	21.0	180.0	„ 2 c.c.
26/ 7/26	1,325.0	650.0	20.0	175.0	„ 10 c.c.
28/ 8/26	—	700.0	—	—	„ 1 c.c.
28/ 9/26	1,355.0	720.0	20.0	175.0	„ 1 c.c.
29/10/26	—	610.0	—	—	„ 2 c.c.
30/11/26	1,330.0	640.0	20.0	180.0	„ 1 c.c.
31/12/26	1,375.0	700.0	21.0	174.0	„ 0.1 c.c.
Average	1,262.3	622.7	20.6	167.5	—

RESULT OF ANALYSES OF BOILER WATER IN 1926.

SAMPLES TAKEN AT WATERING JETTY.

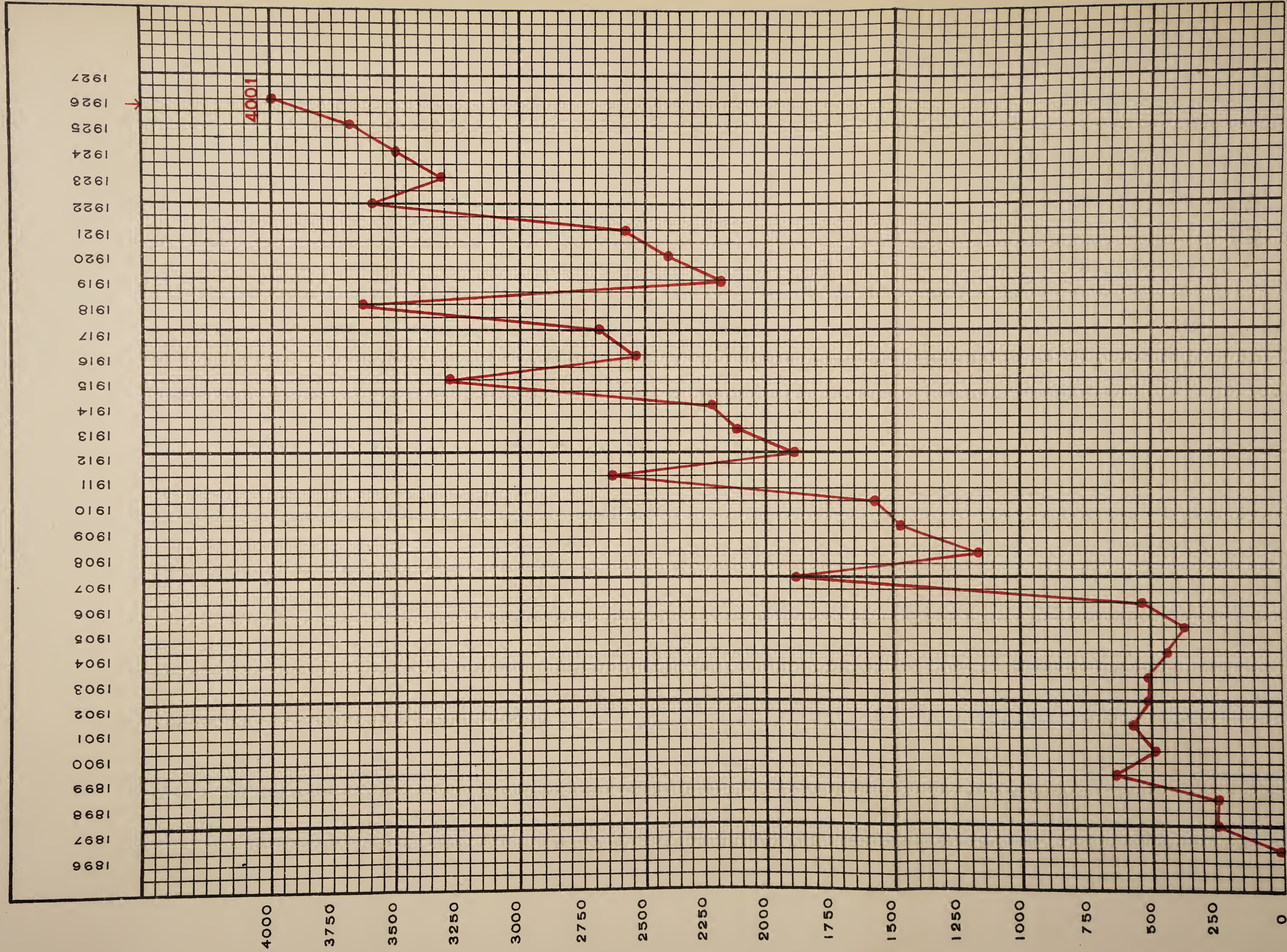
Date	Parts per 100,000.				B. Coli
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
30/ 1/26	112.0	28.0	40.0	16.0	present in 1 c.c.
19/ 2/26	121.0	27.5	35.0	15.0	„ 5 c.c.
30/ 3/26	88.0	19.0	37.0	14.0	„ 10 c.c.
28/ 4/26	119.0	26.5	42.5	11.0	„ 1 c.c.
18/ 6/26	102.4	23.5	35.0	12.0	„ 0.1 c.c.
26/ 7/26	97.0	19.0	34.0	12.0	„ 0.1 c.c.
28/ 8/26	—	21.0	—	—	„ 0.1 c.c.
28/ 9/26	101.0	32.5	45.0	11.5	„ 10 c.c.
29/10/26	101.0	23.0	44.5	11.0	„ 10 c.c.
30/11/26	—	35.0	—	—	„ 5 c.c.
28/12/26	122.0	29.5	42.0	11.5	„ 0.1 c.c.
Average	107.0	25.8	39.4	12.6	—

DISTRIBUTION OF SPECIMENS.

Nature of Specimen.	Civil.	Military.	Navy.	Colonial Hospital.	Spain.	Total.
Blood, Wassermann	123	12	61	96	39	331
Blood count	25	5	4	7	2	43
Blood culture	10	13	—	4	—	27
Blood sugar	32	12	—	10	—	54
Blood urea	15	1	—	27	—	43
Blood, Widal	139	25	1	25	9	199
Blood, Malaria	9	—	2	7	2	20
Goats' blood for M.M.	219	—	—	—	—	219
Swabs for K.L.B., &c.	319	185	32	130	—	666
Sputum	96	45	2	54	8	205
Urine	725	19	21	27	49	841
Fæces	34	53	3	16	1	107
Cerebro-Spinal Fluid	3	—	—	21	—	24
Pus (gonococci)	48	—	3	18	—	69
Serum for T. Pallidum	5	—	—	—	—	5
Human milk	26	—	—	—	2	28
Histological	4	2	—	2	1	9
Gastric contents	10	—	—	286	—	296
Rats for Plague	118	—	—	—	—	118
Food and Drugs Act	137	—	—	—	—	137
Other Food and Drinks, &c.	49	22	7	—	11	89
Waters	175	64	48	—	1	288
Pleural fluids	2	—	—	9	—	11
Auto-vaccine	21	12	—	2	7	42
Stock vaccine	24	3	—	2	—	29
Guineapig Innoc.	11	5	—	2	—	18
First field dressings	—	3	—	—	—	3
Urine for urea concentration	19	11	—	24	—	54
Coal	12	—	—	—	—	12
Miscellaneous	4	4	—	6	—	14
	2414	496	184	775	132	4001

CITY COUNCIL OF GIBRALTAR.

CHART SHOWING NUMBER OF SAMPLES ANALYSED PER ANNUM SINCE THE YEAR 1896.



SANITARY CIRCUMSTANCES OF THE DISTRICT.

Much of the information given in this section of the Report has been kindly supplied by the City Engineer (Mr. W. H. Pearce, M.C., A.M.I.C.E., F.S.I.)

WATER SUPPLY.

Three classes of water are provided by the City Council of Gibraltar, viz., (a) Potable Water, (b) Brackish Water, (c) Boiler Water.

(a) *Potable Water.*

The potable water which is supplied to the public and to the mercantile shipping arriving at the port of Gibraltar, is derived directly from the rainfall, viz., there are no wells or springs or streams.

Nearly every private house is provided with an underground storage tank and pump, and its roof or a portion thereof is set apart as a rainwater catchment area.

This provision, however, is not sufficient or entirely satisfactory in itself and, in consequence thereof, the City Council has provided extensive public works for the collection, storage and distribution of drinking water.

The water is collected upon enclosed, isolated natural and artificial catchment areas of some 35 acres in extent, and is stored in five large reservoirs, which are constructed in tunnels inside the Rock, of an aggregate storage capacity of about 7 million gallons of water. Additional storage capacity to the extent of 1,271,000 gallons is provided by a service reservoir situated at a lower level and near Moorish Castle.

During the year 1926 considerable damage was occasioned to the Council's Artificial Collecting Areas on the Eastern side of the Rock by falls of rock from the adjacent almost vertical cliff face. These occurrences, which are not infrequent, are unavoidable in the circumstances, and are due to the nature of the formation, temperature changes, and to growing trees and shrubs in the clefts, and make careful supervision and maintenance of the Calpe Waterworks a matter of importance and responsibility.

In the course of extensive repairs carried out during the year following on the fall of rocks some hundreds of pieces of timber had to be removed and practically all were found in a perished condition.

A sample of this wood was sent to the British Museum (Natural History Section, S. Kensington) and was reported to be heavily infected with Termites or so called "White Ant."

The particular species in Gibraltar is *Leucotemes lucifuges*, which is the "White Ant" common in the Mediterranean.

Improvements are constantly being made which tend to make the Council's Waterworks safer and more automatic in action. During the year under review, besides several minor improvements effected, an additional automatic overflow has been constructed in the main channel from the areas on the Western side of the Rock.

The Waterworks are so administered that the minimum possible quantity of water collected is run to waste, careful manipulation being exercised in running rain water into the Brackish water reservoirs, thus avoiding wastage during the rainy season through lack of storage capacity in the Potable water reservoirs, and incidentally, effecting a saving in the pumping costs of Brackish water and improving its quality.

A small collecting area at Poca Roca which had been disconnected owing to its liability to pollution is now being renovated, cleared of vegetation, improved and fenced in. When the works are completed, the yield from this area will again be run into the potable water reservoirs and will constitute a valuable asset in periods of low rainfall, and early cessation of the rain year.

The distribution of potable water to the general public and commercial shipping is controlled by the City Council, and a distributing system of pipes leads the water from the reservoirs to various parts of the City by gravitation.

Potable water is laid on direct to many houses, but the largest supplies are drawn from public fountains (supply points), situated at different parts of the city, from which the water is issued to private consumers and to licensed water vendors by public water checkers.

In addition, the City Council supplies water to house holders by butts and also by temporary pipe.

The delivery of potable water to the commercial shipping is effected by means of private tank boats which obtain their supplies through the Council's hydrants and meters situated on the wharves.

The Council's potable water is subjected to full analysis at frequent intervals, and it is endeavoured to store all water for, at least, a fortnight, before distribution to the public. All distribution vehicles, butts, barrels, &c., are periodically disinfected by steam at the Council's Disinfecting Station.

Extensions and improvements to the distributing system of pipes are a routine matter. During the year 1926, old mains in Castle Ramp, Road to the Lines, Cornwall's Parade and

Cornwall's Lane have been replaced by new mains of a greater carrying capacity and additional wash out valves have been provided. A new main has also been laid in the South District from South Barrack Road, along South Barrack Parade and Naval Hospital Road up to the top of Rosia Steps where an additional public fountain has been installed.

The quantity of rain water collected from the Council's areas during the year 1926 was 9,782,585 gallons exclusive of an estimated quantity of 2,815,066 gallons which was run into the Brackish Water Reservoirs and to waste due to lack of storage capacity during heavy downpours of rain.

The quantity of rain water disposed of from the Council's Reservoirs during the same period, amounted to 10,676,134 gallons, which quantity was distributed as follows:—

(a) To the Public.....9,213,704 gallons.

(b) To the Shipping.....1,462,430 gallons.

The difference between this total and that of the rain water collected, being the difference in stock at the end of the year 1926 as compared with that at the end of the previous year.

The price at which the water was sold by the Council is as follows:—

To the shipping, at 2s. per 100 gallons.

To factories, hotels, private houses, &c., at 1s. 3d. per 100 gallons.

To Cattle Sheds, Electricity Works and Pumping Stations, at 10d. per 100 gallons.

From fountains delivered in butts (including 1s. 6d. per 100 gallons for cartage), at 2s. 4d. per 100 gallons.

(b) *Brackish Water.*

Brackish Water is used in Gibraltar for baths, flushing or sanitary conveniences, gullies, &c., fire extinguishing purposes, road watering and general sanitary purposes.

This water is derived from a number of comparatively shallow wells situated in the low lying district of North Front, and the supply is considerable.

During the rainy season the water is comparatively fresh, but during the Summer the water levels are so reduced that infiltration from the sea takes place, and the salinity is greatly increased.

The Council runs three pumping stations and maintain brackish water reservoirs at Moorish Castle, Calpe High Level, Europa Road, Engineer Road and Windmill Hill, which are situated at 210 feet, 343 feet, 208 feet, 410 feet and 523 feet respectively above sea level.

From these reservoirs an intercommunicating system of distribution pipes convey the water by gravitation to every house, and the supply is constant.

The Council also pumps brackish water for War Department purposes to the very top of the Rock—a considerable lift.

During the year 1926 the quantity of brackish water pumped and distributed for all purposes was 236,616,275 gallons.

Improvements and renovations are constantly being effected in the brackish water service. During the year 1926 the old and defective distributing mains in Fish Market Road and South Barrack Road have been relaid by new mains of greater carrying capacity.

The old system of service tanks on or in the roofs of houses which was necessary when the supply was intermittent is being gradually done away with, and direct supply from the Council's mains to the house fittings is being instituted.

The rate at which brackish water is sold to the public is 3½d. per 100 gallons.

The upkeep of main services, meters, &c., is costly owing to incrustation and corrosion.

(c) Boiler Water.

This water is pumped from very shallow wells at North Front and has been sold for commercial shipping arriving at the port of Gibraltar at the price of 1s. per 100 gallons. The price of this water has been increased to 1s. 3d. per 100 gallons for the year 1927.

The water is slightly saline and infiltration from the sea is not so marked as is the case with brackish water.

The quantity supplied during the year 1926 was 3,185,100 gallons.

Schemes are under consideration to improve the quality of this water and the means of pumping and supply.

Algeciras Water.

Potable water was imported from Algeciras during 1926 to the extent of 261,294 gallons. This water was supplied only to the shipping in the bay and for dietetic purposes during periods when the Council's stock of potable water was running low.

The water is conveyed from Algeciras in licensed tank boats which are inspected at intervals.

Samples of water are also taken from the tank boats and subjected to laboratory examination.

DRAINAGE AND SEWERAGE.

The whole of the sewage of Gibraltar eventually discharges into the sea at Europa Point Outfall. The main trunk sewer is 6' 0" \times 4' 6" in size at the outfall and the average gradient is 1 in 1200.

The sewage from the lowest levels is lifted to the main gravitation sewer by means of a series of Shones' Ejectors.

Numerous storm overflows exist in the line of the main sewer and come into operation in times of heavy floods. The configuration of the rock is such that very large volumes of storm water very quickly reach the lower levels and the sewers are taxed to the utmost. The rate of run off is abnormal, and during heavy rains boulders and much silt reaches the sewers.

The existing Sewage and Drainage system is maintained in good condition and works of de-silting the main sewer have been carried out during the year 1926.

There is a small low lying area near the Public Markets that is still without a proper system of foul drainage. It is hoped that a small pumping scheme will be carried out when funds are available and a sanitary improvement thus effected.

Private house drains are continuously being tested and those found defective are relaid under notice. Much work is done in this direction.

REFUSE COLLECTING AND DISPOSAL, SCAVENGING AND HIGHWAYS.

REFUSE COLLECTION.

Each house is required to be provided with a suitable portable receptacle for house refuse which is collected by the Council's scavenging employes once a day in winter and twice a day in summer. The refuse carts are washed out after every trip by means of water hoses under great pressure, and are disinfected daily.

During the year 1926 the Council has purchased and put into commission a modern low loading line, petrol driven, Shelvoke and Drewry, refuse collecting freighter car, to serve the flat lower district of the Town. The results obtained have been very satisfactory both in the rapidity with which the removal of the refuse from the Town is effected and in the cost of so doing.

The configuration of Gibraltar makes it uneconomical to completely supersede animal transport by mechanical trans-

port for the collection and removal of house refuse, but, with the view of effecting every possible improvement in this service, consideration is being given to the extension of this latter method.

Gibraltar is a most difficult district for refuse collection and the service in the circumstances is very well performed.

REFUSE DISPOSAL.

The refuse collected from the Northern and Central Districts is incinerated at the Council's Refuse Destructor situated at the North Front, and the comparatively small quantity collected from the Southern District is tipped into the sea at Europa Point.

During the year 1926 large improvements and additions have been effected to the Council's Refuse Destructor which now comprises two complete two-cell continuous grate incinerating units besides Carcase cremating chambers, a De-soldering Apparatus Tin Baling press, Workmen's Baths, Mess Rooms, Office, Smithy, Subsidiary buildings, Plant, &c. The works, which were designed and carried out by direct labour, have brought the Refuse Destructor up to modern standard. Continuous running is now possible and sanitary improvements in the disposal of refuse has thus been effected.

Tins are sterilized by being passed through the De-soldering furnace, after which they are pressed into bales and disposed of by being dumped in areas where reclamation from the sea is in progress, or used as hardcore.

Steam generated at the Refuse Destructor is utilised for disinfecting purposes at the Council's Disinfecting Station which is situated in close proximity to the Destructor buildings.

STREET CLEANSING AND SANITATION.

The main routes on the level are split up into small sections and one sweeper with orderly boy and hand cart is attached to each section. Street orderly bins are provided at strategic points to serve the orderly hand carts. All other routes are swept twice or thrice a day by travelling sweeper gangs. During the summer months additional sweeping of roads is effected at late hours.

Streets are well watered with brackish water several times every day by street watering valves and hoses with spreaders. The main thoroughfares are washed and scrubbed down with

hoses under great pressure as required, and sometimes disinfectant is added. Street gullies receive much attention especially in summer when the water is changed daily. The City Engineer is giving a vacuum gulley emptier consideration before reporting to the Council.

The dust nuisance is now practically non-existent, it having been largely eliminated by the use of bitumen and tar compounds in road construction wherever the gradients permitted. The non-absorbent waterproof surface thus formed makes it possible to maintain such roads in a much more hygienic condition.

PUBLIC RECREATION AND SPORTS GROUNDS.

The only grounds open to the public for recreation are Alameda Gardens and Victoria Gardens which are maintained by the Colonial Government and a few very small open spaces, gardens and promenades under the control of the City Council.

There are no sports ground available for the general public or children, and these are badly required.

Tree planting in various parts of the town is systematically proceeded with.

PUBLIC BATHS.

There is a need for Public Baths in Gibraltar. Very few houses have a fresh water supply laid on; the percentage of houses having bath rooms is also small, and no facilities exist for obtaining hot water in bulk in homes. It is, therefore, obvious that, under such circumstances, Public Baths are a necessity and every effort should be made to popularise them.

Sea bathing facilities for the general public are very limited and additional accommodation is much required.

Condition of the bathing beaches is still far from satisfactory, they are often littered with rubbish.

The Council maintains slipper baths, hot and cold, at Irish Town and several improvements were carried out therein during 1926.

These baths are satisfactory, but are not patronised by the public as much as was hoped for.

Three sea bathing establishments are also provided and maintained by the Council but better and more extended accommodation is necessary.

Sea bathing is also indulged in at Catalan Bay, Sandy Bay, Rosia Bay, Camp Bay and the Western Beach. The general public have not many facilities in this connection, free access being only allowed to Catalan Bay which consequently becomes congested during the sea bathing season. The foreshore of this small bay is kept clean by the Council at Public expense.

The number of occasions on which the Public Baths and Sea Bathing Establishments were made use of during the year is approximately as follows:—

Public Baths, Irish Town 5,394

Sea Bathing Establishments—

(Ragged Staff, Chatham Counter

Guard and Devil's Tongue)... .. 40,875

SANITARY CONVENIENCES.

A number of public sanitary conveniences exist at various parts of the City. Nearly all the old public latrines and urinals have been remodelled and improved on modern lines and the same is gradually being done with the few existing old ones left. In 1926 the public urinal at Castle Road was thus treated and a new modern public lavatory was constructed at Crutchett's Ramp to replace one of the old type.

CAB HORSE WATERING TROUGHS.

The Council maintains the pump, wells, &c., and keep in order several such places to provide water for cab-horses.

DOG TROUGHS.

The Council provides and maintains dog troughs at frequent intervals, and in summer keeps them supplied three times a day with water for drinking.

HOUSING.

The housing problem in Gibraltar is one that bristles with difficulties and no real progress can be recorded.

During the year 1926, minor alterations have been effected to several private houses many having been thus improved in accommodation.

Two new buildings have been constructed by private enterprise at Baker's Passage, one being a block of flats which should slightly better the housing problem, and the other being an extension to the Bristol Hotel and which, though indirectly, should also have a beneficial effect to this end.

A large block of new flats are also in course of construction at Cumberland Steps. Rents in Gibraltar are unduly high.

Repairs of an important nature have been carried out in houses in the following localities :—

Main Street (10)	Cumberland Road... (3)
Castle Road (2)	Flat Bastion Road... (3)
Kavannagh's Court... (1)	Bell Lane (1)
Lime Kiln Steps ... (2)	Serfaty's Passage... (1)
Castle Street (1)	Lopez's Ramp ... (2)
Irish Town (2)	Parliament Lane ... (1)
Devil's Gap Road ... (2)	Rosia Ramp (1)
Victualling Office	
Lane (1)	Cornwall's Lane ... (1)
Market Lane (1)	Prince Edward's Road (2)

SUMMARY OF WORK DONE BY SANITARY INSPECTORS DURING THE YEAR 1926.

COMPLAINTS RECEIVED:

Written	13
Verbal	137

PREMISES INSPECTED:

General inspection (systematic house-to-house) ...	179
Casual inspection	8

NUISANCES FOUND:

Defective drains	237
Obstructed drains	262
Defective W.Cs.	183
„ water fittings	172
„ W.C. fittings	313
„ rainwater pipes	73
„ eavesgutters	111
„ roofs	75
„ yard paving	54
Dampness	53
Premises dirty	67
Defective or no Dustbin	98
Suspected pollution of water in underground tank ...	51
Underground tank not insect proof	59
Brackish water tank not insect proof or no cover ...	179
Brackish water running to waste	244
Samples of Food and Drugs taken for analysis ...	139
Premises disinfected for infectious disease	198
Premises disinfected for vermin, &c.	9
Stables disinfected	50
Articles disinfected at N.F. Disinfecting Station ...	4129
Visits of enquiry re Infectious Disease	221
Cases removed in Ambulance:	
Local	48
Bay	45
Visits to Milk-Shops	311
„ Eating Houses	178
„ Mineral Water Factories	138
„ Common-Lodging Houses	110
„ premises on which notice for abatement of nuisances have been served and are revisited for the purpose of ascertaining if require- ments are being complied with	2388
Notices served in accordance with Vaccination Ordinance, 1887..	256
Legal proceedings instituted	22
Foodstuffs, &c., condemned as unsound and further action taken	—
Street water fittings found defective	188
Defects found	2286
Defects remedied... ..	2180
Pending on 31/12/26	106

REPORT OF THE VETERINARY ADVISER.

Although the health of the animals of the Colony is on the whole good several minor outbreaks of infectious disease occurred during the year 1926.

Generally speaking the conditions under which animals are kept in Gibraltar leaves much to be desired. This perhaps is inevitable in a highly congested community where space and housing accommodation of all kinds are so limited but it nevertheless must have a direct bearing on the public health, as well as on the health of the animals themselves.

During frequent visits to stables, cowsheds, goatsheds and poultry runs scattered throughout the Colony much overcrowding, insufficient light and ventilation, defective drainage and a general lack of cleanliness was observed.

With the introduction of motor-traffic on a large scale congestion in stables is not so acute as in past years and it seems likely that the commercial horse and mule will before long disappear from the streets. From a hygienic point of view this would be desirable and would permit of the abolition of numerous places totally unfit for the accommodation of animals.

The cowsheds and goatsheds from which the local supply of milk emanates are for the most part a standing disgrace to the community and in their present condition render a clean local supply of milk an impossibility. Many of the buildings are quite unsuitable for the housing of milch animals, they are antiquated, overcrowded and insanitary and should be either closed down or demolished and suitable sheds erected in their stead. Some of the premises could be improved by alterations and additions.

There are ample Laws and Bye-Laws in existence to ensure a healthy local milk supply to the public but these are not and could not be enforced short of closing down the establishments completely. It seems to me that the dairymen have done their share and that it is now a matter for the Government to consider the erection of modern premises on suitable sites at a fair rental rather than adopt the drastic measures of abolishing the herds completely.

An outbreak of Contagious Abortion occurred during the year in one dairy herd, all the cows becoming infected. The disease is a specific uterine catarrh peculiar to cattle and is characterised by the expulsion of the foetus at any time from the beginning to the normal completion of gestation—in this case abortion took place on an average after 7 months pregnancy.

The economic loss to the owner is considerable on account of the diminished milk supply. Cows seldom give their full supply depending a good deal on the period of pregnancy. The period of lactation is shortened and some cows are dry for a long period. Loss of calves at a nonviable age and temporary or permanent sterility is often the most serious factor in connection with the disease.

Isolation and thorough disinfection of the premises was carried out as far as limited accommodation permitted.

During the year one case of Tetanus occurred in a horse.

Amongst poultry a serious epidemic of Avian Diphtheria (Roup) occurred in the Colony. The disease is a contagious one characterised by a diphtheritic inflammation of the mucous membrane and affecting the mouth and pharynx.

There is complete agreement that no ætiological or epidemiological relationship exists between this disease in birds and human diphtheria.

The disease is common enough in Spain and has been frequently seen in Gibraltar; it usually occurs during the cold months.

It is common practice to use birds for food in the early stages of the infection after the head has been removed but I am of the opinion that the carcasses of all affected birds should be condemned as unfit for human food.

The following are the suggestions of the National Poultry Council with regard to the keeping of fowls in towns and appear to form an excellent basis for poultry keeping in Gibraltar:—

(a) 1. Fowls kept in back yards less than 400 sq. ft. in size should be kept on the intensive system, *i.e.*, their run should be completely roofed over; the floor should be of some hard material, for example, cement, wood or hard beaten earth, upon which should be placed a sufficient amount of scratching material.

2. The run must be boarded up sufficiently high all round so as to prevent scratching material being scratched out into the yard.

3. Fowls should not have less than 6 sq. ft. of floor space per bird in the run.

4. Fowls should not on any account be allowed out of the hen-house into the yard.

5. Hen-houses must not exceed 6 ft. in height and must be placed as far from a dwelling-house as possible.

6. Not more than one-third of the total yard space should be taken up with the hen-houses.

7. The greatest cleanliness must be maintained, manure must be removed regularly, and no food left lying about so as to attract rats and other vermin.

8. There must be no offensive odour.

9. No open run without a roof must be used in any yard under 400 sq. ft. in size, and where such outside run is provided it must be kept sweet and clean, the earth, sand or gravel must be well drained to avoid a sloppy condition in wet weather, and the material of the run must be entirely renewed as often as necessary.

(b) That any premises or place within 10 ft. of any dwelling-house shall be deemed for the purposes of Section 18 of the Public Health (London) Act, 1891, to be a place unfit for the keeping of poultry.

In contrast to the previous year no definite case of Rabies occurred in the Colony during 1926.

Seventeen dogs and four cats were dealt with as suspicious cases and either held for the usual quarantine period in the Dog's Rest Isolation Kennel or the brain extracted and sent to the Pasteur Institute, Tangier, for examination.

The examination of the brains of 8 dogs and one cat gave negative results.

The remaining nine dogs and three cats were either returned to their respective owners or destroyed on the termination of the quarantine period.

The freedom of the Colony from Rabies may be attributed to the Ordinance forbidding the introduction of dogs into Gibraltar and to the strict enforcement of the Muzzling Order.

COMMON LODGING HOUSES.

There are four common Lodging Houses in Gibraltar.

They have been maintained in good sanitary condition during the year.

No cases of infectious disease occurring in them have been brought to notice, there have been no overcrowding, and the Bye-Laws have been strictly observed in all cases.

LIST OF ORDINANCES, BYE-LAWS AND REGULATIONS RELATING TO PUBLIC HEALTH IN FORCE IN GIBRALTAR.

ORDINANCES—

“The Public Health Ordinance, 1907,” embodying the following sanitary provisions :—

- Sewage and Drainage.
- Sanitary Conveniences.
- Scavenging and Cleansing.
- Water Supply.
- Provisions for the protection of Water.
- Regulation of Cellar Dwellings.
- Common Lodging Houses.
- Nuisances.
- Houses let in Lodgings and in separate Tenements.
- Offensive Trades.
- Unsound Meat, &c., Food and Drugs.
- Infectious Diseases—Provisions against Infection.
- Prevention of Epidemic Diseases.
- Mortuaries.

“The Vaccination Ordinance, 1887,” providing for the compulsory vaccination of all children born in Gibraltar within three months after birth, and revaccination on attaining the age of 12 years.

“The Tobacco (Chopping) Ordinance, 1922,” prohibiting the chopping of tobacco otherwise than by machinery.

“The Midwives Ordinance, 1907.”

“The Quarantine Ordinance, 1895.”

“The Diseases of Animals Ordinance, 1925.”

BYE-LAWS—

- Bye-Laws with respect to Nuisances, 1893.
- Bye-Laws with respect to Buildings, 1893.
- Bye-Laws for regulating the supply of Brackish Water for Flushing and Cleansing Purposes, 1905.
- Bye-Laws for the Control of the Milk Supply, 1913.
- Bye-Laws made for the purpose of prescribing and regulating the seizure, detention, &c., of diseased cattle or animals, 1914.
- Bye-Laws with respect to Nuisances, 1915.
- Bye-Laws for the prevention of danger arising to public health from the importation, &c., of ice creams, 1915.
- Bye-Laws made for regulating the supply of water to water-vendors and other persons, 1918.
- Bye-Laws made for the prevention of danger arising to public health from the importation, preparation, &c., of food and drink intended for human consumption, 1918.

Bye-Laws for the prevention of danger arising to public health from spitting in public places, 1921.

Bye-Laws for the prevention of overcrowding in premises, houses or rooms let as dwellings, 1921.

RULES—

Rules for regulating the burial of persons who have died from infectious diseases, 1918.

Rules made by the Board of Health in pursuance of powers vested in them by the "Quarantine Order in Council, 1885," regarding infected vessels arriving in the Port.

Rules for regulating the practice of Midwifery in Gibraltar, 1924.

Regulations made under the "Diseases of Animals Ordinance, 1925."

FOOD.

SUPERVISION OF FOOD SUPPLIES.

Gibraltar is divided into four districts with one Sanitary Inspector for each. These Inspectors carry out the examination of all foodstuffs exposed or deposited for sale in shops, manufactories, hotel and café, kitchens, eating houses or by hawkers.

Retail shops in the town maintain a good standard of cleanliness, and foodstuffs are protected from contamination by flies or dust.

There are seven bakehouses in Gibraltar; these all conform to the Bye-Laws. The method of distribution of bread, however, is not satisfactory, a small amount only of wrapped bread being sold. It is very desirable that this should be extended.

The manufacture and sale of ice creams is only permitted in approved premises, and is under strict control.

STREET VENDORS.

There are a large number of hawkers in Gibraltar—more than are considered necessary or desirable. It is difficult to estimate the actual numbers as they vary daily. The majority of them are aliens.

The control of hawkers is a difficult matter, they are however kept under surveillance by the Sanitary Inspectors as far as is possible.

MARKETS AND SLAUGHTER HOUSES.

The Markets and Slaughter Houses are under the Colonial Government and are in charge of the Supervisor of Markets.

THE PUBLIC MARKETS.

During the year the question of the transfer of the markets from the Colonial Government has been under consideration and a scheme has been prepared for the complete renovation of the markets. The present buildings are in a somewhat dilapidated condition and the markets generally not up to modern sanitary requirements.

The meat supply during the year has not been altogether satisfactory, the animals imported being often in poor condition.

The Slaughter Houses are under control of the Supervisor of Markets.

A considerable amount of slaughtering is carried on for Spain.

The Slaughter Houses and surroundings when visited during the year were found to be clean and in a satisfactory sanitary condition.

The number of animals slaughtered during the year was as follows :—

Cattle	...	...	...	11,035
Sheep	...	...	...	5,350
Pigs	...	...	...	1,435

During the year the opinion of the Inspector of Food was requisitioned on 92 occasions.

The following table shows the causes for which carcasses or portions of carcasses were condemned as unfit for human consumption, and ordered to be destroyed :—

CATTLE.

<i>Disease.</i>				<i>In whole.</i>				<i>In part.</i>
Tapeworm	...	...	...	37	...	...	...	74
Tuberculosis	...	...	...	—	...	...	...	1
Cowpox	...	...	...	1	...	...	...	—
Fever	...	...	...	1	...	...	...	—

SHEEP.

Emaciation	1	—
------------	-----	-----	-----	---	-----	-----	-----	---

PIGS.

Tapeworm	...	...	...	3	...	...	...	—
Emaciation	...	...	...	1	...	...	...	—
Tuberculosis	...	...	...	1	...	...	...	—

MILK SUPPLY.

The milk supply of Gibraltar is both local and imported.

The local supply is small in amount chiefly owing to the limited amount of grazing available, and the scarcity of suitable accommodation for the animals.

The general conditions under which the local milk supply is produced are far from satisfactory; the sanitation of cow-sheds and goatsheds is most difficult to maintain owing to the dilapidated condition and defective construction generally of many of the buildings which lack all modern requirements. Provision is not made for cooling and storing of milk or for the efficient cleansing of milk cans and other appliances. Even drainage is absent.

The approximate amount of milk produced in Gibraltar is :—

Goats	360 pints per day.
Cows	156 „ „ „

This is derived from 4 herds of cows consisting of 39 animals, and several herds of goats consisting of 282 animals.

The amount of milk imported daily in Gibraltar is approximately :—

Goats	2,745 pints.
Cows	70 „

Thus it will be seen that Gibraltar only produces about 15 per cent. of its fresh milk supply.

All goats in Gibraltar are kept in a register and examined serologically for Undulant Fever at intervals. No goat has reacted to this disease for many years.

The imported supply is boiled in Gibraltar before retail as the Council has no control over the sources of production.

There are six registered milk shops in Gibraltar and six stalls at the Public Markets for the sale of milk.

There are 55 registered milk vendors.

In addition to fresh milk, condensed tinned milk is used to the extent of over 1,000 tins a day.

Dried milk is very little used.

Sterilized bottled milk is sold by three milk-shops, the milk being sterilized in the premises and delivered in sterilized sealed bottles.

WORK IN CONNECTION WITH THE PORT MEDICAL DEPARTMENT.

Frequent consultations were held between the Captain of the Port, Port Surgeon and Medical Officer of Health in connection with the measures to be adopted to prevent the introduction of disease by shipping into Gibraltar.

The occurrence of Bubonic Plague was reported from localities in Morocco and Algeria on several occasions during the year and precautions were taken to safeguard Gibraltar against infection.

In October information was received of the presence of Pneumonic Plague at Oran which was immediately declared an infected place and all arrivals from that port subjected to strict quarantine for 7 days.

The regulations dealing with Quarantine were revised during the year, and are as follows:—

QUARANTINE ORDER-IN-COUNCIL, 1885.

R U L E S .

In pursuance of the powers vested in them by the Quarantine Order-in-Council of 1885, the Board of Health makes the following Rules regarding infected vessels arriving in the Port:—

Rule 1. Vessels arriving in Gibraltar in which there is or has been a case on board of plague, cholera or yellow fever within six days immediately preceding the date of arrival shall be kept in quarantine and subjected to the following measures until six days shall have elapsed since the death or removal of the last case of plague, cholera or yellow fever, after which the vessel shall be subjected to the measures provided in Rule 2 hereunder:—

1. Medical inspection on arrival.
2. No traffic of any kind shall be allowed with such vessel other than that sanctioned for the supply of water, coal and provisions, and no barge or craft to be alongside from one hour before sunset to one hour after sunrise, and all gangways to be up for the same period.
3. All barges taken alongside for any purpose to be disinfected in situ under the supervision of the Port Surgeon who shall consult with the Medical Officer of Health as to measures to be adopted.
4. In the case of yellow fever and plague, the ship to be moored at least 200 metres from the shore and nearest ship or hulk.

Rule 2. Vessels arriving at Gibraltar in which there has been a case of plague, cholera or yellow fever at the time of departure or during the voyage, but no fresh case within six days, shall be kept in quarantine and subjected to the following measures for a period of six days after arrival, after which, if no fresh case of plague, cholera or yellow fever shall have occurred on board, she shall be admitted to free pratique:—

1. Medical inspection on arrival.
2. The crew not to be allowed to land.
3. The question of loading and discharging cargo or taking coal with shore labour shall be decided by the Captain of the Port acting in concert with the Colonial Secretary, Port Surgeon and Medical Officer of Health.
4. Passengers on a recognised passenger ship whose port of disembarkation is Gibraltar shall be allowed to land and proceed on their journey immediately, but those remaining in Gibraltar must be placed under strict surveillance and medical inspection for six days from the date of arrival of the ship, and such persons shall be liable to be placed in isolation.

Rule 3. Vessels arriving from an infected place within six days notwithstanding there shall have been no death from or case of plague, cholera or yellow fever on board either before departure or during the voyage or on arrival, shall be placed in quarantine on arrival, and subjected to such measures as may be decided upon by the Colonial Secretary, Port Authorities and Medical Officer of Health acting in concert.

Rule 4. In the above Rules, letters and correspondence, printed matter, books, newspapers, business documents, &c., (not including parcels conveyed by post) shall not be subject to restrictions. Parcels conveyed by post will be treated as cargo and subjected to the restrictions regarding cargo provided in these Rules.

Rule 5. The supply of water, coal and provisions in Rule 1 (2), and the loading and discharging of cargo in Rule 2 (3), shall be carried out under the control of the Port Authorities who shall take all measures necessary to prevent the staff employed on this duty from becoming infected. They may be subjected to observation or surveillance for a period not exceeding six days from the time they have ceased to perform the work.

Rule 6. The total destruction of rats on board a ship placed in quarantine on account of plague may be required before the ship is allowed to effect direct communication with the shore after expiry of quarantine period.

Deratisation must in all cases be carried out under the supervision of the Port Authorities.

Rule 7. In all cases in these Rules where medical surveillance and inspection are mentioned, such surveillance and inspection shall be carried out by a Medical Officer appointed by His Excellency the Governor.

Rule 8. Vessels arriving in Gibraltar in which there have been cases of a disease other than those mentioned in these Rules shall be dealt with as in Rule 3.

Rule 9. The Rules made on the 10th day of July, 1923, and 30th July, 1926, are hereby repealed.

Rule 10. These Rules shall come into operation forthwith.

Dated this 29th day of December, 1926.

*AMOUNT OF SHIPPING ENTERING THE PORT OF GIBRALTAR
DURING THE YEAR 1926.

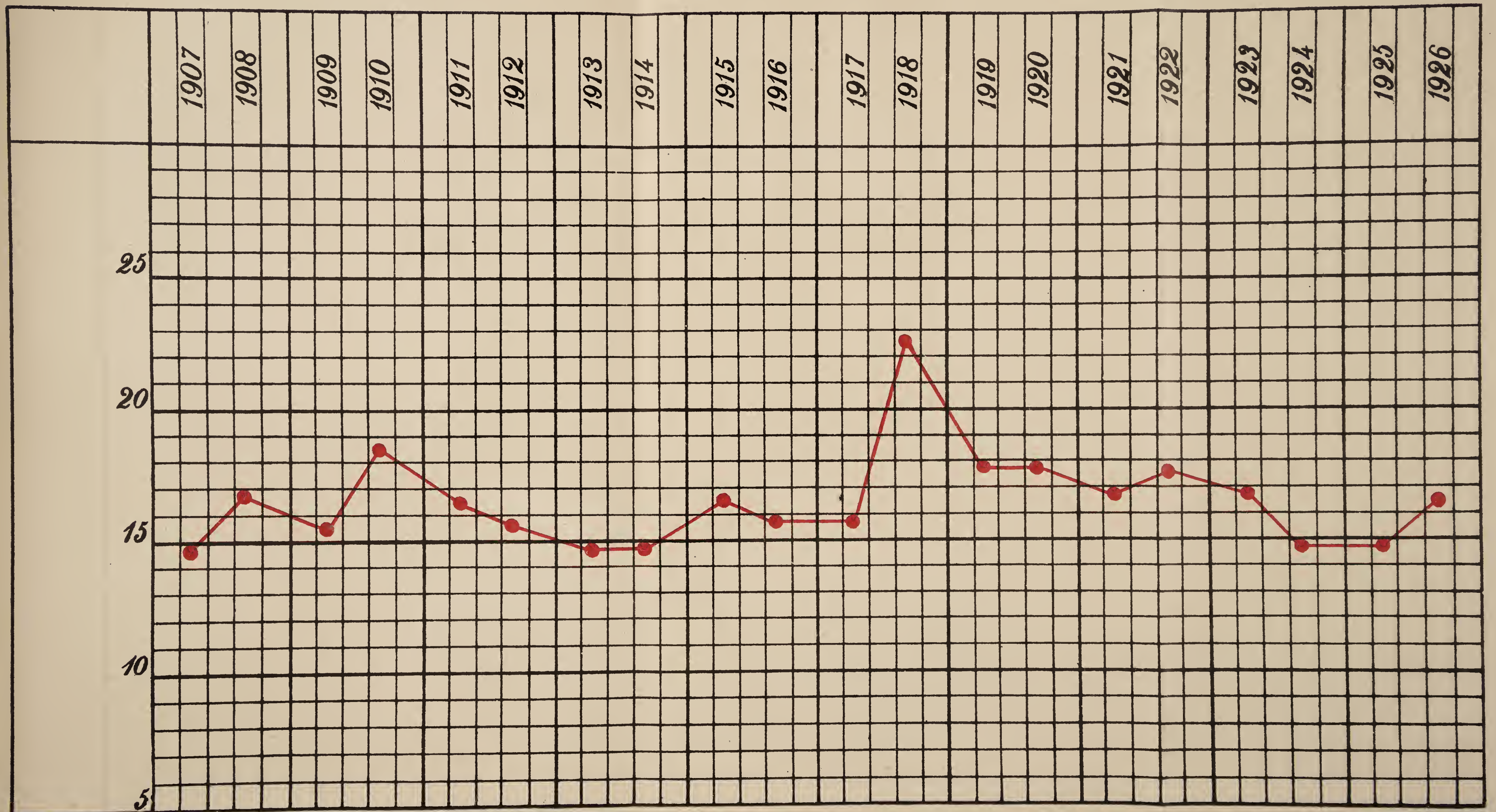
		Number.	Net Tonnage.	Number inspected.	Number left in quarantine.	Number admitted to Pratique
British	{ Steam	1,301	3,547,673	24	1	23
	{ Sailing	15	4,838	—	—	—
Total British		1,316	3,552,511	24	1	23
Foreign	{ Steam	2,444	2,547,498	12	1	11
	{ Sailing	567	21,279	5	1	4
Total Foreign		3,011	2,568,777	17	2	15
Total British and Foreign...		4,327	6,121,288	41	3	38

*Information kindly supplied by the Captain of the Port.

CHART I.

General Death Rate per 1,000 of Total Civil Population, Gibraltar, for the Decennial Periods

1907-1916 and 1917-1926



Average

1907 - 1911

16.07

1912 - 1916

15.40

1907 - 1916

15.73

1917 - 1921

18.05

1922 - 1926

16

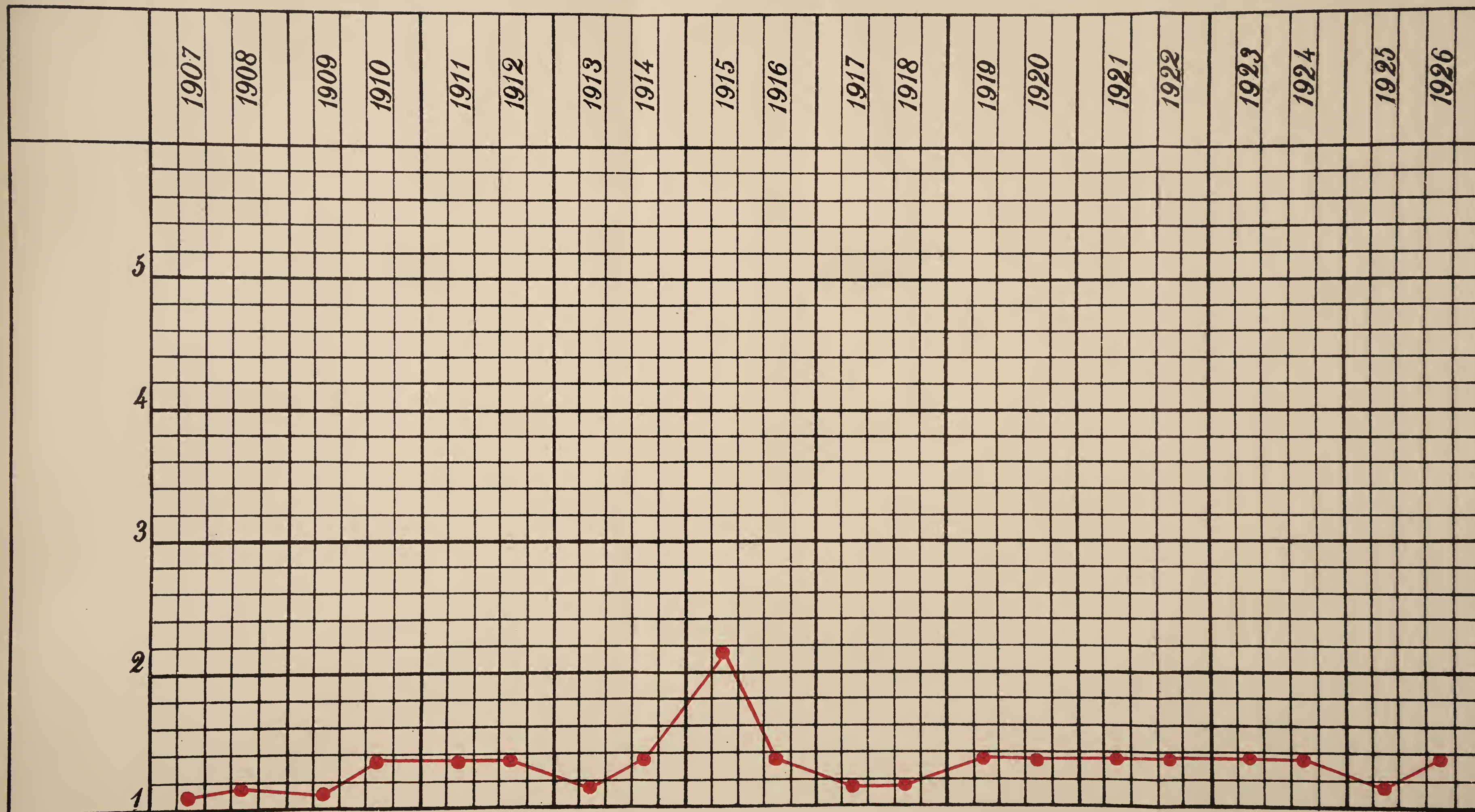
1917 - 1926

17.02

CHART II.

Zymotic Mortality per 1,000 of Total Civil Population, Gibraltar, for the Decennial Periods

1907 - 1916 and 1917 - 1926



Average

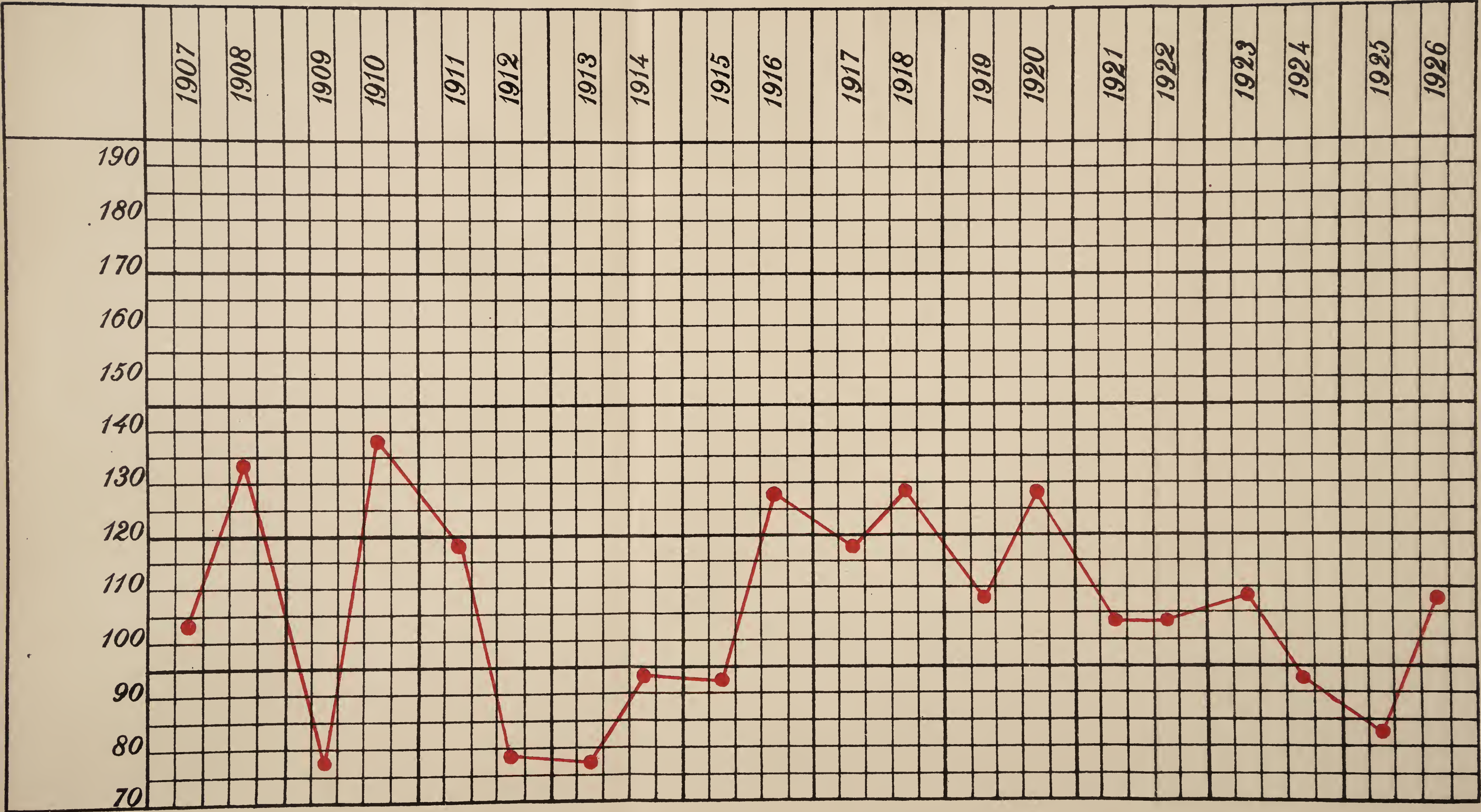
1907 - 1911	.83
1912 - 1916	<u>1.36</u>
1907 - 1916	<u><u>1.09</u></u>

1917 - 1921	1.05
1922 - 1926	<u>1.25</u>
1917 - 1926	<u><u>1.15</u></u>

CHART III.

Infantile Mortality per 1,000 Births for the Decennial Periods

1907-1916 and 1917-1926



Average	{	1907 - 1911	112. 3	1917 - 1921	115.27
		1912 - 1916	<u>92.14</u>	1922 - 1926	<u>98. 8</u>
		1907 - 1916	<u>102.21</u>	1917 - 1926	<u>107. 1</u>

APPENDIX

TO THE

ANNUAL REPORT

ON THE

HEALTH OF GIBRALTAR

FOR THE YEAR

1926.

MOSQUITO-CONTROL IN GIBRALTAR,

—BY—

Sir RONALD ROSS, K.C.B., K.C.M.G., F.R.S., Director-in-Chief,
Ross Institute and Hospital for Tropical Diseases.

The mosquito-problem in Gibraltar is entirely a domestic one, but peculiar difficulties exist for the effective control of mosquito-breeding in the Colony, the more important being, (i) the special conditions regarding the water-supply of the place which necessitate the presence of numerous tanks, cisterns, etc., in the houses, and (ii) divided control, the area being under several different authorities, namely the Colonial, Naval, Military and Civil authorities; so that it sometimes happens that the prevalence of mosquitoes in a locality may involve two or three of these authorities.

2. The three varieties of mosquitoes which breed in Gibraltar are all Culicines (domestic mosquitoes), and of these, two are known disease carriers :—

- (1) *Aedes (Stegomyia) argenteus*, commonly known as *Stegomyia fasciata*, the 'carrier' of Yellow Fever, Dengue Fever, and possibly, Epidemic Jaundice, and
- (2) *Culex pipiens*, which is closely allied to and almost indistinguishable from *Culex fatigans*, a 'carrier' of Filariasis and possibly also Dengue. *Culex pipiens* may, and possibly does, carry both these diseases.

3. I observe that the Council have for several years past expended considerable sums on anti-mosquito measures, amounting to over £600 in 1925. The Medical Officer of Health has placed before me details of these measures, which I consider most comprehensive and up-to-date, and comprise :—

Provision of the most modern literature and apparatus; the training of Sanitary Inspectors (who now have a thorough knowledge of the subject); training and the issue of detailed instructions to the workmen employed on 'Mosquito Brigades'; and the organisation of an excellent system of carrying out regular inspections.

4. This campaign has been supplemented by co-ordination with the Colonial, Naval and Military Authorities, who have issued special orders and instructions, and have provided personnel for their own areas.

5. I am glad to see that the Health Department has definitely worked out the species of mosquitoes occurring on the Rock and their habits and breeding seasons which agree with the facts now generally known to science.

6. From my own observations here and from conversations with various persons whom I have met whilst here, and from evidence which the Medical Officer of Health has placed before me, I consider that the expenditure of the Council on this work has been fully justified, and that most valuable results in local mosquito-control have already been obtained. The card-enquiry carried out during this summer in Gibraltar shows clearly this, and also the interest taken locally in the mosquito-problem.

These results were as follows :—

“ has much decreased ” ...	...	...	...	47
“ has decreased ” ...	...	...	...	38
“ unaltered ” ...	...	...	...	8
“ has increased ” ...	...	...	...	—
“ has much increased ” ...	...	...	...	—
Cards not completed ...	...	...	...	4
Total answers ...				97

My own experience during the few days I have been in Gibraltar is that I have not seen a single mosquito here; and to my certain knowledge, but for this mosquito campaign of the Council, Gibraltar would have been heavily infested by the insects. I infer this (i) from what I have heard of Gibraltar in the old days, and (ii) from what I observed myself in the Mediterranean (with a similar climate), at Port Said and Ismailia in 1902.

The conditions in Gibraltar are, or rather were, in my opinion, equally favourable to mosquito-breeding.

7. That mosquito-control in Gibraltar should continue I have no doubt whatever. Apart from the question of disease-carriage by mosquitoes, we have to remember the great annoyance caused by these insects. No one would dream of allowing bugs, fleas, and lice in their houses or on their persons; why should they submit without protest to the equally disagreeable and more dangerous attentions of mosquitoes? In a mosquito-control campaign the greatest difficulties are connected with the first steps; these have already been taken in Gibraltar; the organisation is complete; the staff is trained; the inhabitants are acquainted with the subject; and the Council and the public are now reaping the results of the efforts and expenditure involved in the past. It would be a disaster if all these advantages should be lost by the discontinuance of the work.

Although Malaria and the *Anopheles* are not present in Gibraltar, they abound in the neighbourhood, as do other species of disease carrying mosquitoes. If the Yellow-Fever mosquito is unchecked in Gibraltar, the danger of Yellow Fever recurring here as it did in former years will always be present. The same may be said of Dengue Fever, and if either disease does recur the cost to Gibraltar will in a few weeks far exceed anything now being spent on prevention, to say nothing of the restrictions on trade which will be imposed by quarantine.

8. I note that the Council have approached the Colonial Government on the question of more definite legislation for the purpose of checking mosquito-breeding in private premises. The question can be, and has been, argued at length from both sides. On the one side legislation may assist the powers of a municipality; on the other hand it tends to annoy householders. Legislation may help in reducing the frequency of sanitary visitations, but it often increases *pari passu* the labours of magistrates, and is apt to beget resentment amongst the public. On the whole from what I have seen, the mosquito-control campaign is progressing very successfully indeed under the powers already granted. If at a later date it is actually found that certain difficulties cannot be overcome without legislation, all I can say is that the question of adopting it will then have to be considered. Many Colonies have introduced special legislation for mosquito-control, but opinions are still divided as to the actual benefits given by it.

From my visits to tenements in Gibraltar with the Medical Officer of Health, and from a very considerable experience of municipal administration in other parts of the world, I am of opinion that weekly visits would still have to be maintained in spite of any legislation which may be imposed.

The poor in any town are so engrossed in working for their own living that they really cannot be expected to be efficient sanitary inspectors themselves, even regarding their own premises, unless they are all provided with model dwellings.

9. I note in the Report on the Mosquito-Campaign here for 1925, that one half of the breeding places were found to be in wooden washing tubs, and this has also been observed to be the case during the present year. The substitution of metal tubs as suggested by the Medical Officer of Health would certainly be a great advantage, but possibly a costly one, and it might be suggested that the provision of suitably equipped wash-houses with water laid on would be even a better solution of the problem.

Of course the whole aspect of mosquito-control in Gibraltar would be altered by the provision of a piped water supply and the abolition of cisterns.

10. After much study of this subject in many parts of the world I have been very pleased to see the progress made in Gibraltar and congratulate the Council on their progressive policy and on the interest they have shewn in mosquito-control.

RONALD ROSS.

Gibraltar, 8th November, 1926.

